

The American Journal of Pharmaceutical Education

**The Fifty-fourth Annual Meeting will be held in Boston, Massachusetts
on August 22-24, 1954**

**THE OFFICIAL PUBLICATION OF THE AMERICAN
ASSOCIATION OF COLLEGES OF PHARMACY**

"I am certain that a teacher's service will be improved if he makes an effort to find out how his students learn and if he will then organize and manage his teaching in accordance with that knowledge."—Lloyd E. Blauch, Chief of Education in the Health Professions, Office of Education, Department of Health, Education, and Welfare.

"A pharmacognosist must not be merely a pharmacognosist, but in addition a person interested in his university environment and conscious of what is being taught elsewhere within the sphere of his biological and chemical interests."—Heber W. Youngken, Jr., College of Pharmacy, University of Washington.

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Number 2

INSTITUTIONS HOLDING MEMBERSHIP IN THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

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*Denotes year institution was admitted to the Association.

THE AMERICAN JOURNAL OF PHARMACEUTICAL EDUCATION

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The Value of Pre-Professional Training for Pharmacy*

ADAM S. BENNION, Ph.D.†

Regent of the University of Utah

This convention that has gathered in Salt Lake City is an outstanding one. I don't say it to flatter you. I've faced all kinds of audiences, and I can detect their qualities . . . but this audience is remarkable. Remarkable to me . . . and it has honored our town by coming into it. We're fond of our town just as you are of yours. And the thing that I glory in, is now having been in every state in the union, that this land is full of wonderful people. All you have to do is go where they are to become convinced that the hope of America is her people. I know the newspapers play up a lot of things that are on the bad side, but I'm not fearful that we're going to crack up because in my town, most of the scandal attaches to about 3% of the population. And I'm not going to let the 3 per cent crowd out in my mind the other 97 per cent. As I fly over this country, I am impressed that the hope of America lies in the fact that the homes here are still full of wonderful people.

Well, you didn't invite me here to talk about these things. As a matter of fact, the people here who know me insist that I must tell one or two of my favorite stories. They haven't anything much to do with pharmacy.

I'm a power man. I will tell you my favorite power story. Now, it may have been told in every power territory in the country, I don't know. But it happened in ours; and I love it. I've loved it ever since. The line men in a power company are a great group. They have to be or they couldn't stay. They're the men who climb the poles and keep the service going against all kinds of odds. The weather's never too tough

*Presented at the Annual Joint Banquet of the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy in Salt Lake City, Utah, August 17, 1953.

†Dr. Adam S. Bennion is a member of the Board of Regents of the University of Utah, an Apostle of the Church of Jesus Christ of Latter Day Saints, and former Vice President of Utah Light and Power.

for them. But they speak a language all their own. If you've never heard a lineman really open up, then you don't know what the glories of the English language can be. The only fellows I know that can match them at all are the fellows who drive balky horses or mules,—that seems to make for a kind of eloquence, too. Well, these linemen do a very good job. When they get started, the air's usually purple. We had a complaint come in from the southeast part of town, from a good woman who said that they were in distress out there because they couldn't let the children go out and play. We had a line crew out there working and she said the language was something awful. That we had to do something about it because they couldn't keep the children in the house all the time. So I called the foreman of the crew in, and I said, "Bill, what goes on out there?" He said, "Oh, nothin'. Service was out and we had to climb the pole for a repair. Jim went up the pole and he took a pot of hot solder. When he got up there, he tipped it and it fell down and went down my neck." Then he said, "I just looked up the pole and said, 'Jim, you've gotta be a little more careful.'" "Okay, Bill, I've known you for quite a long while. What did you say?" I can't quite quote that, but most of you men would understand it if I could.

Then I will tell you the one that has nothing to do with that story or what I want to say tonight. It's an Arthur Godfrey story and some of you may have heard it. It centered in a convention, too, not like this one. I've been impressed with the control you exhibit. I think you know the effects of the stuff, so you go modestly. But there are conventions where they indulge the social hour until you wonder what the purpose of the convention may have been. Well, these two fellows had been at one of those conventions and they got so high that they didn't know how to get home. When one of them suggested to the other, the railroad track ran right past their amusement hall, "Let's go out and get on the track, and if we stay on it we go right by our house." So they went out and got on the track and walked for some forty-five minutes when one fellow said to the other, "This is the longest stairway I ever climbed." And the other one blinked and said,

"Hell, it ain't the stairs that bother me. It's this low hand-rail."

Well, you can see the stories have nothing to do with pharmacy. But I think it's the stories that brought me here. Maybe you'd rather have me tell stories than give the talk. As a matter of fact, I'm not a crusader at all. I've just come here with some convictions that have grown out of the years.

I was telling your president here tonight I'm so grateful to our university. A country kid with no great prospects,—with no business being in a University at all. As a matter of fact what I want to say to you tonight hinges on a couple of experiences. I'd come in from out in the country and did my high school work. I did it in the University because it was essentially an over-grown high school. And at the end of three years I had to make my choice. I didn't know just what I was going to do. But Dean Byron Cummings, then dean of our School of Arts and Science and a teacher of Latin, and one of the grandest teachers I ever had, took me aside one afternoon and said, "Ad, I understand that you're making your decision that next year maybe you'll go out." And, really, that was what I was doing, because I didn't have the money to stay in and go through at all. I didn't have money enough to begin the place. I should have never been in by all the average laws that operate. He said, "I wouldn't go out, if I were you." And he was gracious enough to say, "Son, you're too young to go out to work." That seems a long way back. He was too gracious to say I was too immature, but that was what he should have said. Well, for some reason, I went home and talked it over with mother and said, "I think I'm going to stay." And she said, "Well, that's all right son. You stay as long as you want to." Then I began to play in an orchestra and I made enough money to stay, to keep on, and I stayed through college.

May I say it humbly. I can understand how an alumnus feels toward a university. I have tried over and over again to think what my life might have been had I quit at the end of another year and gone out to teach in some elementary school. What a college does for a man you just can't put down. It

has given me a conviction that attaches to what I want to say tonight.

Well, the second thing that impressed me years later when I'd gone back and begun teaching in the department of English in our own university, I received a special assignment which I shall never forget. The faculty conceived the idea that the engineering students were learning engineering, but that's about all they were learning. And so somebody came up with the bright idea that they ought to be introduced to the humanities. I was given a course in English for engineers. If I live to be a hundred, I'll never forget that course. Those engineering students served notice on me the first day they were in there that they were wasting their time. They had problems enough getting engineering. It was what they were going to make their living at, it was all they were interested in, why bother losing a good hour each day in this course called English? I struggled through that for a year, but I shall never forget it. I'm quite sure that's not the way to tack something on. You can't take a pin and pin culture on a fellow's lapel and say, "Look, son, you're an engineer, but now you have culture." It just doesn't work that way. You can't add it. You can't tack it on as an appendage. Either a man loves it, he picks it up and goes through it, or he doesn't get it.

Well, those two experiences lie at the base of what I want to say tonight. There are a lot of things that have value. It's a singular thing to me that in the organization of the universe, man came into it with the privilege of choice. However you explain the process, here it is. And man has choice. And he comes to have a sense of values. Some men go up high and some men stay on the lower levels. And the fellows that plateau early just move along at the lower level. Perhaps they're satisfied, I don't know. But it has always seemed to me that with the God-given instinct to go on up, we ought to take pains to help men to make the higher choices. You men face that. The college men face that choice.

One of the boys was talking to me over there today and he said, "Can we afford to take more time to get pharmacy or to get engineering or to get any other course?" I said,

"Look, they're in college for four years. They're going to work for another forty, or maybe fifty." I think you can't argue time on that kind of stretch. He said, "Can they afford to do it?" I said, "If you put it in terms of what they can afford to do, you should remember Shakespeare's line, 'Reason not the need', I think you can extend that, 'Reason not the ability.'" The boy that can come three years or four years or five can stay six or seven. I have neighbor boys who have gone into medicine and they have spent thirteen years, but they're two of the finest boys I've ever known, and they won't be just ordinary physicians when they're through. One aspires to find an answer to the hardening of the arteries. And he already has one of the finest assignments in America. The other boy has been retained at Mayo's, and I think the boy is headed for one of the most distinctive careers that I know. Now, maybe they would have done that with lesser training. I suspect that it's the quality of mind that pushed them up to this tremendous preparation that is opening the door wider than it is ever opened for the ordinary boy.

Recently, I read a volume called "Ferment in Education," which gets pretty close to you. It was a series of discussions at the inauguration of President Stoddard at the University of Illinois. President Hutchins, formerly of Chicago, said at that time two or three things that I want to give you tonight. He was talking about this process called education, and I drop in just for a paragraph. It is not enough to say then, "let us have lots of education. Or lots of education of the right people. Or lots of expensive education. We must have universal education, let it cost what it may, of the right kind. And that is the kind to which we hope to raise ourselves by our own boot straps, into a different spiritual world. That is the kind which places sound character and a trained intelligence above all other aids. And which helps the citizen to work out for himself a set of principles by which he may live." And he put his finger on the note that I want to sound.

I'm going to face this problem as if my own boy were to come home and say, "Dad, I've decided I'm going into pharmacy." All right. He'll get his mathematics and science, his

chemistry and his botany. You've seen to that. And, may I say parenthetically, I'm not here to argue either two or three, or four and five, or five and one. I don't want to presume to tell you that it ought to be pre-pharmaceutical. I don't want to say that it ought to be along the way. I'm not sure that ideally it wouldn't be a fine thing to bring them back after they've been out practicing for five years. And then give them what they might have picked up along the way, but they missed. I leave that to you. That's your field and function, not mine. But I beg of you to remember that among other things, we're Americans, and the privilege of being an American is the privilege of citizenship. And citizenship has never been labeled with a pharmaceutical sign. It's bigger than that. The glory of freedom lies in the fact that men and women have the capacity to rise above the details of today's job and participate with other men and women in the finest pursuits that are available in a free land. Well, if I were talking to my own boy, I think I would say, "Son, were I in your place, I think I'd equip myself for a part to play in this world of affairs." I shouldn't like to be pushed off into some laboratory corner. I'm mindful of the importance of the technical training, the techniques, the perfected techniques that make men strong. But I'd like to be part of the stream of this great democratic society. So that along with the technical training, I'm here tonight to make a plea that I would make for my own boy. A plea which has made my own life so much richer than it ever could have been otherwise, has paid dividends beyond anything I can picture for you. I'm offering you six suggestions.

I'd lead a boy who is going into pharmacy into six fields. He has to go into all six if he's going to measure up under the kind of definition I have for this man of today. This is presumptuous, and I know it. I've already taken care of his mathematics and his science. Those will be tucked in. I'm not going to make a case for languages tonight, though I'm grateful for the exposure that I had. I've always had the conviction that the man who wants to master his mother tongue should study the language of some other people. I can't put

my finger on the full values of Latin. I not only had one of the greatest teachers I ever had in my life, in Latin, but my Latin has reinforced me in English as no additional training in English ever could have done. I'm not here tonight to make a plea for Latin. You get the same kind of training, though not quite so vigorous in either French or German. As a matter of fact, if I were a young man now going into college—you may not agree with me at all—but if I were back there now starting my language work again, you know what I'd study? I'd study Russian, because I think the conflict of tomorrow is going to be between us and the Russians, and I'd like to get the feel of those people. And you don't ever get the feel of a people unless you know their language. Well, that's wholly incidental.

A boy is young once. He puts on his togger, intellectually, and when he's put it on, you're through changing the pattern. Now, I know a lot of men that say they'd like to go back. We don't go back, we get ridden too hard. I think the time to make sure the boy's had the windows of his soul opened is before he has begun his profession. That's the only thing I'm going to say about the timing.

Well, as we prepared this discussion, some of our own men said, "Now, just don't talk about it in general terms. Tell us what you'd have us do." And I'm offering that here tonight to you for what it may be worth.

First of all, I would take them into the field of history. How I'd love to go back now and take a course in history such as I conceive it. I had my work in history. I can still see the man who taught me United States History. That was one of the duller hours I ever went through. Came right after lunch. I don't mean to be ungrateful. Somebody said, all teachers are divided into three classes, those you forget, those you remember to forgive, and those you hold in cherished memory. Under this man we majored in the chronology of events. Memorizing of dates and places, Brother, I thought he just wanted to stamp us all with a kind of encyclopedic pattern and say "You've had United States History." It didn't ever dawn on me in that course that this is a tremendous

country. He didn't ever thrill me by leading me to Plymouth Rock. He didn't ever ask me to go over the Battle of Gettysburg as I've gone these many times. How any man could be dull in United States History, I don't know. I'm not talking about history where they just bring in and throw the book at you and say "Come, the 13th of December you'll have a test on the first quarter of this book." Hmph! I would love to have a course in history! See how much fascinating material you could get. It took me a long while to learn that all the great cities are built on water. And the man who threw that at me one day just gave me a whole new lead. I travelled into the northwest, into the northeast, just recently, and I rode the big rivers. You know, you could take the big rivers in America and make a wonderful study. Have you thought about it? You don't have to get many points of view. You have to have somebody open the window and say, "Here's a great prospect." I don't mean ordinary history. I don't mean just another course. As I conceive this additional time, this additional year, if you will, it should be given over to superb teachers. The ordinary, dry, routine course will not achieve what I have in mind. But the man with inspiration can take these fine young men that are going into professional work, and it's good for engineers, it's good for the surgeons and physicians, it's good for any man who is going to be bottled up in the confines of a technical course and a technical pursuit to have the vista opened on history, the history of mankind. The story of the rise and fall of nations. What became of Egypt and why. Why did Babylon become a mere memory—and they had to dig to find the evidence of the memory? What happened to Greece and Rome, and why? What's happening right now to Britain? And, God forbid, what may happen to America? As I conceive that course, once you throw it at those fine young men, they will have an historical point of view such that all the rest of their lives their thinking, their acting will be colored by the foundations they've built. But on history, I have read into it, and I am reading into it these days with a new and creative sense of appreciation I never dreamed I'd have from that one man that pretty nearly ruined me in United

States History. If that was history, I wanted no more of it. I read "The Meaning of History," and if you turn to it, you know what it does for you. I remember the stir I got out of H. G. Wells' outline. I can't presume to tell you what the great books are, but there are books in this field, so rich, so stimulating that no man will ever be the same again after he's read them.

The second field I'd lead them into is the field of sociology. I think professional men of all men in the world ought to catch the meaning of sociology. The fine art of living together with other people. But, again, it shouldn't be anything as dry as dust. It shouldn't have its prescription, a prescription in any field is not any too exhilarating. If you haven't read "Keys to Peace," if you haven't read Edmund's "Fountainheads of Freedom," if you'll turn to them for an hour or two, you'll begin to get the meaning I have in mind when I talk about sociology. Why people are like what they are. You've read that little book, "Why People Behave Like Human Beings," and the last one I'm reading is "How to Live and Work Successfully With People" by Hepner. Once you follow such a point of view, you just become interested in that thing thing called mores. Why are people like what they are?

We could spend the evening on sociology, but I want to hurry into the third field. I think if we're going to make this nation as strong as it ought to be, then we ought to get into the field of economics. And I'm more and more impressed. Now, what I'm going to say is going to sound a little critical. I think in the last score of years we've threatened our very civilization by a kind of economy which in my book is unsound. We've just concluded a two year study of the schools of Utah, and, over and over again, I ran into teachers who want federal aid in education. I just don't believe in federal education. I know the place of the land grant colleges, I know their special functions, but when you try to give special federal aid to provide school lunches for children in the public schools, I just have to be against it. Now you may be for them. I cannot be. I don't think there's any magic about federal education or anything else. The interesting thing to me, and I have been

surprised how few people seem to discover it, is that there's no magic about the federal treasury. The federal treasury doesn't have a dime in it that it first doesn't take out of the states. Will you believe me, they take out of the little state of Utah a hundred and thirty-eight million dollars a year, direct, in federal taxes. And, if you include the indirect assessments, too, they take two hundred and forty-two million dollars out of our state. And in the program of federal aid, they come up with, I get a thump out of this every time I think of it. They get ready to help us with a little federal aid, and they say, "If you'll raise so much, we'll match it." So, for every dollar you get, you pay two to get it. Now, if that's good economy, I'll skip it. And yet, we have a whole generation that has been led to believe that you can get something for nothing. The things we've done in the name of economy in the last dozen or so years! We're upset right now in our national economy because we tackled the question of subsidy. And we got used to it. I've talked to farmers by the dozens, and they say, basically, in their hearts, the thing's unsound. But other people are getting the checks, why shouldn't they? I think the time has come when men ought to study basic economy and know it, whatever their field of action may be. A little volume, "Economics in One Lesson" is a great little volume. We've had as many as thirty-two courses going in our own company; that's been one of my assignments. And I've come to believe that basic sound principles of economics is one of the most important things that any man or woman ever gets. And the woman has her place quite as much as the man because she spends most of our money. Thank goodness she does. I've often said humorously that the woman is the great economist—she has the magic of saving a little out of what he 'ain't got. That's economy.

I want to name the fourth field, and here is one that's dynamic. I try to picture a group of a hundred boys being thrown into fields like this for a year, for a semester, not the routine courses, but a glorified, intensified heightened course for men who are on their way toward big things who haven't time for the little routine men that want to be lifted up. I'd

introduce them to the field of psychology. Now, how I know the difficulty.

We were training customer-contact people, adjustment counter people, sales people, and I conceived the idea that it would be a fine thing to bring down a psychologist to give them the fundamentals. They spent the first three weeks on the synapse! The class disappeared. Now, I can understand the importance of tracing the connection between the afferent and the efferent nerves, and all the other kinds of nerves, but those people didn't see any sense in it, and so they just vanished. I tried to corral them, but they said—not for us. "That has nothing to do with salesmanship, nothing to do with complaints or collections or anything else."

That's in psychology, one of the most fascinating fields in all the world. There can't be anything much more interesting than psychology—the study of you and me and why we are what we are. What makes us click? What makes us do the things we do the way we do them? I don't care whether you call it psychology or not, it's common sense with a technical prefix. Walton, I think it was, who said that "psychology is just putting what everyone knows in language that nobody can understand." I've always loved that.

We run into psychology every day. I went into the drug-store the other day to get a rootbeer, and two gals were standing behind the counter. I really felt sorry that I was interfering with them. I didn't happen to know what they were talking about, but they were interested. Finally, they got to the end of the discussion and one of them said, "Have you been served yet?" I said, "I don't remember." She got a shocked look on her face for a couple of minutes, and then she caught hold of herself and she caught it!

For the last six months I've been calling at pharmacies to make observations. I don't want to make you unduly concerned, but you ought to take a look at yourself once in awhile. I want to tell you that some clerks fairly defy you to buy. You can take it for. . . Well, the first key that I try to give people who are working with other people is: develop what I call anticipation. "Beat them to it." Meet them coming in the

door. Once you do it, then it's a fascinating challenge. And that's just plain psychology.

I spent a delightful hour over in the psychological laboratory, this afternoon, and the library . . . and I came up with half a dozen books to read. My psychology is a little old. I came through in the days of James and MacDougal and Watson and Thorndike and Gray. Now comes a new generation of psychologists and they have the same ideas, but they put them in a little different language. We ought to get the new techniques and these new words. It's a fascinating challenge. If you haven't read him yet, try a couple of hours with William James sometime, who not only was one of America's greatest psychologists, but he had the great gift to put down his psychological concepts in as thrilling a manner as any novel I ever read. If you haven't turned to his "Energies of Men," turn to it one day and you'll never be quite the same again.

You're gracious and I don't want to wear out your wonderful welcome. I want to name two other fields. The fifth field is the field of literature. That's my old field. Now, you tell me that men don't like to read books—that isn't quite true. I've been working for thirty years now and feel sure that there is a book for every boy that will leave him a new boy.

The inspiration I caught, I caught from a teacher of English literature in West Point. He had the tough job of trying to introduce soldiers to literature. He wrote a little book, "What Literature Can Do For You." If you haven't read it, there's another one you ought to pick up sometime for an hour and a half, "What Literature Can Do For You."

We went to California with four children to get the Ph.D. degree. Don't tell me it's easy. I know it isn't. But that last year I was teaching in the Department of Education at California and I was also teaching in a private school to get enough to pay the rent. And that school, that private school, White's Preparatory School in the hills of Berkeley was attended by boys that had been kicked out of all the other high schools in California. And, when I went up there, they said, "Here's your course of study." My first task was to teach that bunch

of roughnecks Milton's 'Paradise Lost'. Well, I could just see myself thrown out of that group. But I conceived an idea, and next day when I went over to meet that class, I wish you could have seen them. They hadn't been thrown out for nothing. I said, "Have you fellows ever been in hell?" One boy said, "No, I don't reckon I've been there, but I've sure had a lot of it."

"Maybe you'd be interested. Why don't we take a trip. How would you like to go down and see what went on?" I hope I'll be forgiven someday, the way I introduced *Paradise Lost* by a trip to hell. I've never had such a capable group of actors. For at least one semester, we got through. I didn't get fired, and I paid the rent.

Literature can be made palatable. There are some interesting books, and the great books have all been labeled and put aside for us. Alfonzo Smith, who had the job of teaching those West Point boys, started out his memorable year by saying "Fellows, I don't know what your purpose may be, but I can introduce you to 15 people who, if you know, will open the whole world of literature to you." I won't take your time to read them all. He named the 15 men and women who constitute the heart of great literature. Ulysses, King Arthur, Beatrice, Don Quixote, Falstaff, Hamlet, Robinson Crusoe, David Copperfield, Silas Marner, Uncle Remus. It isn't important that you remember those names and agree with them at all. If you've already caught the fun of Uncle Remus, there's a whole new world. The only book that ever kept me up all night was Victor Hugo's "*Les Miserables*." Intrigued, it was no trouble to read round the clock twice. It's that kind of book. Now, when you open to young manhood the vista that attaches to great books you open to them a new world. I have taught literature, and I know how we weary pupils once in awhile. I used to take a whole semester on Chaucer. I know the limits of Chaucer now. I've tried to teach Browning, and I know I can bore boys with Browning, but I have also discovered there are great things in literature that you can thrill young men and women with, and it's that kind of literature that I'm talking about.

I close with the sixth one. The glory of being a human being. Man's the only animal that can and won't think. I've always loved that—Man is the only animal that can and won't think. And he thinks through the medium of language. And language is the tool of thought, and the art of communication is the richest privilege given to men. I glory in it the more I think of it. I stand up here and how I do it I don't know. But I play the air from the diaphragm up against the vocal chords and out comes sound. Some day I'd like to know how that happens. Then, from my vocal apparatus, it goes through the air and contacts your ear. Now, we're so used to that it doesn't strike us as much, but it's a miracle. I glory in it. I marvel at television and I thrill at radio, but I still can't quite get over the magic, the majesty of the human voice, how it groups sounds, letters into words and how there can be communication from one man to another. The fine art of expression is the key to many a man's place in the universe. And so, my sixth suggestion for this exposure, if you will, would be the kind of expression—not lost in the rules of grammar, not hedged about by those endless details of exposition and narration and all the rest of that talk—but the fine creative art of saying something that's interesting. Will you let me close with this experience—it could have easily thrown me into jail, but it didn't. At the time, I was teaching English at the University of Utah. I got some of the dullest themes that any man ever read. I used to sit by the hour some nights, reading stuff that ought never to have been read. And I had one fellow that just wouldn't say anything. One day I said to him, "Son, why don't you put something down on paper?" And he said, "I don't have any ideas. I don't know how to write themes."

"Well," I said, "I'll excuse you son. You don't need to hand in any more papers until you get an idea."

He said, "I don't know where I'll get one."

"I'll give you a hunch. Go down to the Hotel Utah and sit in the lobby . . . and just sit there until something happens." He said, "Okay. That I can do." That was in the days of the war. He sat and looked, and he looked too hard.

It wasn't long until the police picked him up. They took him over to Police Headquarters as a spy. And, try as he would, because of his lack of communication he couldn't convince them that he wasn't.

"If you ever felt the need of this course, you ought to have had it." He got over there and he was held.

The following Monday he brought in his theme. It was "something." I said, "Son, I told you, if you ever got an idea you could communicate." He became one of the best students I ever had. It finally dawned on him that the purpose of language is to communicate ideas. That was a revelation to him. And there was no longer any torture in composition. He was to find an idea and then put fitting clothes around it. And when you do that kind of thing, you're in the language of expression. For men who are going to be pharmacists, as I tell our men who are engineers, however great their techniques may be they ought to master the key of communication among mankind.

You've been gracious. In fancy, I'm talking about that boy of mine, that I'd like to take his place in the world of mankind, in a free life where there are no limitations, and where only his tireless energy is the measure of his achievement. If he were my son, as he may be yours, I'd say linger a little longer on the way and open the windows of the soul to the greater life that can be yours, because you're a son of God—in a free country. Thank you.

The Edwin Leign Newcomb Memorial Awards Committee of the Foundation has announced the 1953 winners of these prizes as follows:

Miss Elena Gantier-Auxence, instructor, University of Chile, Santiago, for her illustrated essay on *Piscidia Erythrina*.

Drs. D. P. N. Tsao, Oregon State College, School of Pharmacy, and Heber W. Youngken, Jr., University of Washington, College of Pharmacy, for their report on the investigation of **The Effects of Cobalt, Acetates, Ascorbic Acid, and Cholesterol on Growth and Glycoside Biosynthesis in Digitalis Purpurea.**

Honors and Education in Perspective*

CHAUNCEY SAMUEL BOUCHER, Ph.D., L.L.D.

Of course you are aware that we meet to honor a group of students who have won high distinction in their scholarly pursuits; but, perhaps you need to be reminded that this occasion has more significance than a mere passing tribute. We meet not only to bestow laurels where laurels are due, but also to dedicate these young lives to greater achievements in the years ahead.

Of the members of the current student body who will become known as distinguished alumni of the University of Arizona, the percentage from this group of honor students will be much higher than the percentage from the entire student body. Of this group of honor students a large majority will become leaders in their respective chosen fields of endeavor; they will receive positions of high trust and great responsibility; and their financial rewards will average perceptibly above those of their classmates generally and above those of any group of similar size selected on any other basis.

What evidence do we have for such predictions? It has been shown beyond question that there is a high correlation between the quality of high-school records and college records; and between college records and professional or graduate school records. But, you may ask, does this correlation carry on between university records and successful performance in professional, commercial, or industrial pursuits after graduation? The answer is "YES!"

*Delivered before the Honors Day Assembly, University of Arizona, Tucson, November 19, 1953.

†Dr. Chauncey Samuel Boucher, eminent American historian, author, educator, and administrator began his teaching career as an Instructor in History at the University of Michigan in 1910. In the years that followed he became successively: Professor of History in Washington University; Professor of American History in Ohio State University (Columbus) and in the Universities of Texas, Wisconsin, and Chicago; President of West Virginia; Chancellor of the University of Nebraska; and Abraham Lincoln Lecturer in American Civilization at Knox College, Galesburg, Illinois. He has made significant contributions, both as an investigator and as an administrator in educational organizations at both the secondary and the higher educational levels as well as in his own field of specialization. He is an ardent advocate of the study of the history of the sciences and of the professions. He made notable contributions on the history of both medical and dental education and has appeared on the programs of both professions with papers on those areas. He has, on many occasions, given vicarious support to study and research in the field of historical pharmacy. He has been a strong advocate, both by word and deed, for higher standards in order to improve the educational program in the pharmaceutical area. Dr. Boucher is now retired. The home is 2016 East Lee Street, Tucson, Arizona.—Ed.

In 1928 a study of 4,125 college graduates then employed by the American Telegraph and Telephone Company was published by President Walter S. Gifford under the title, and in answer to the question, "Does Business Want Scholars?" The answer was emphatically "YES!"

One hundred four colleges and universities were represented in the study. The median line of achievement with the company was computed for the entire group and was drawn on a chart in terms of salary and position at five-year intervals at from five to thirty years after graduation. The standing of each in his graduating class was secured from the college registrar. Early in their careers with the company the median lines for each of four groups—those in the top tenth of their graduating classes, the top third exclusive of the top tenth, the middle third, and the bottom third—began to differentiate themselves and ended at 155, 120, 96, and 80 per cent, respectively, of the median attainment of the entire group.

In 1936 the then well-known writer John R. Tunis published a study of the careers of the members of his 1911 class at Harvard—twenty-five years after graduation. For purposes of the study, he divided his classmates into four groups. In terms of financial status, earned rather than inherited, in terms of rank of positions attained and honors of various types received during the twenty-five years following graduation, he found that: the Phi Beta Kappa men, the scholastic honors men, led the field, and not by a small margin; they were followed by the clubmen, the inveterate participants in campus activities other than athletics and high scholarship; then came the average, run-of-mine men, unheard-of and unsung in college; last, trailing in lowest position, came the athletes, the temporarily men-of-fame in undergraduate days. Of the four groups, the Phi Beta Kappa men contributed most to the welfare of the nation. There were 4% of the entire class in *Who's Who in America*, but 30% of the Phi Beta Kappa men were there.

Several years ago a study was made at the University of Wisconsin that included all bachelor's degree graduates over

a period of 45 years who had been out of college 15 or more years. The average scholastic mark for each graduate was secured from the university official records. Classmates and others who knew the graduates and their careers were asked to give confidential estimates of their later success in life. Thus, two lists of the same persons were prepared independently, based on different criteria at dates separated by at least 15 years. When the lists were compared it was found that there was a remarkably high positive correlation of ninety, high with high, and low with low, between the two lists. It was found in this study that if a student were in the top tenth of his graduating class his chances of achieving a career in life worthy of inclusion in *Who's Who* were more than 50 times as great as for a name lower in academic rank.

Frequently it is said that the student who participates in extra-curricular activities, even at the expense of his academic standing, receives better experience and training for life than the "book-worm" or the "grind." Nevertheless, many business firms, such as the Bell Telephone Company, have learned what a Vice President of General Motors recently told me was his experience over many years in employing members of the graduating classes in engineering: every time he deviated from the choice of men solely on the basis of academic records, and yielded to the old argument that personality and a record of student activities was more important than academic record, he made a mistake—he took the wrong man.

I hope that enough evidence has been presented to show that the primary importance of this occasion is the consecration of these honor students to significant achievements in their future careers.

Now let us turn to the second part of this address, namely, "Higher Education in Perspective."

Frequently you hear people sigh for "the good old days;" but, in the field of education, persons who utter laments of this type must not know that higher education in days of yore was not as good as it is today.

It has become trite to remark that we are living in a time of change—great change—in nearly every phase of life. Those engaged in manufacturing or in commerce have learned that they must change procedures and processes rapidly in the face of speedy changes that affect them. Similarly, sound educators have learned that they must institute changes rather frequently if they are to meet the needs of a changing society.

Confronted as we are with this situation, it seems to us almost incredible that for well over two thousand years, twenty centuries, from ancient times to modern times, through Renaissance and Reformation, through the Industrial Revolution, through the American Revolution and the French Revolution, through great and fundamental changes in every phase of life—political, economic, and social—clear down to the American Civil War, those responsible for educational programs in academies, schools, colleges, and universities, in all parts of the civilized world, changed only minor details of their programs and procedures, saw no need for educational job-analysis in times of change, but clung steadfastly and always conservatively to their narrow, well-trodden paths, ignoring life as it was changed frequently and fundamentally in the living of it by man in society, with the result that the institutionalized educational process became an outmoded anachronism.

Even in America, throughout all our colonial period and clear down to our Civil War, the curriculum of our colleges was based essentially on that of Oxford and Cambridge, which, in turn, came straight from the Middle Ages; and the mediæval university curriculum rested on the curriculum of the academy of Athens, and thus dated back to the classical days of Greece, in the fifth century B.C.

College education in America during the first two and a quarter centuries, from the founding of our first college in 1636 down to the 1860's, was not very inspiring because the students were immersed in too much rote memorizing and in theories and dogmas that had little or no relation to creative intelligence or independent thinking, or even to the

world around them and the life they lived; the purposes were far removed from anything so practical as commerce or agriculture or any professional pursuit except that of the ministry.

In the American scheme for higher education down to 1830 girls, as a matter of course, were kept out of not only the colleges but also the grammar schools that prepared boys for the colleges, because, as society was then organized, girls were not considered worth a liberal arts education.

Nine colleges were launched in the American colonies before the Revolution of 1776. The founders of the first, Harvard, stated clearly their purposes, namely, to train ministers, to educate young gentlemen, to sustain the Puritan faith, and to preserve learning, good manners, and Christian morality in the wilderness. To this end students and teachers lived in the same building, under a fixed discipline, studying, dining, and worshipping together. All the decencies and comforts of life which the times afforded were deemed necessary for the "gentlemen" scholars.

The chief requirement for admission to any American college of the colonial and early national period was the ability to speak, write, and translate Latin, since the college textbooks and classroom instruction were in Latin. The college curriculum, based on the classical Greek scheme via "the seven liberal arts" of the Middle Ages, the trivium and quadrivium, included Latin, Greek, and Hebrew primarily for future divinity students, Aristotelian logic, a smattering of mathematics, and some thin shreds of natural science frequently called natural philosophy but not worthy of the modern name of science. There was no English literature, no history, no geography, no political science, and no political economy.

Each college student had a tutor and each tutor taught his charges all subjects. There were no formal courses, no course credits, no written course examinations. On recommendation of his tutor a freshman was promoted to sophomore (one doing his "sophomes" or exercises in logical disputation); next came promotion to junior sophister, and then to senior sophister—and perhaps it may be said with some

reason that sophistry bulked large throughout the college course.

The only reason we have the four-year college course today is because Harvard adopted it in 1636. Harvard adopted it because Cambridge and Oxford had it. They had it because Oxford, when started in the middle of the 13th century, adopted it. Oxford adopted it at that time because English students who had been going to Paris, to study there informally, decided some years earlier that four years of advance study, though not for a degree or for course credits—for there were no course credits or degrees in those days—would be a reasonable length of time to stay away from home.

Undergraduates in colleges of our colonial and early national period were subject to a strict routine of study, prayers, lectures, and recitations to tutors, all of which, together with four meal hours and two periods of relaxation, occupied the day from five in the morning until nine at night. Freshmen lived in abject subjection to all superiors, both upper students and faculty. The flogging of culprits, practiced before 1700, then gave way to ear-boxing; that in turn passed out about 1765. Since, throughout the colonial period all students were ranked in the official listing in the catalog and were given privileges according to the social position of their families, an effective punishment was to lower an offender's college rank and status. In 1772, in face of the democratic movement accompanying the revolutionary movement, since social ratings were causing too much jealousy and envy, the colleges changed the listing of students from the order of their families in the social hierarchy to alphabetical order.

During the final examination period, which the students called the "sitting solstices," the student could expect to be examined by any of the college officials, as well as the college tutors, and literally "all comers." Commencement exercises were characterized not only by orations and debates by students who were candidates for degrees, but by festivities that lasted a week and included a great feast and other activities so varied that Commencement seems to have had some characteristics of a modern football game, a fourth

of July celebration, and a county fair all combined, attended not only by parents and the officials and major dignitaries of the colony but also by a considerable number of common folk of worthy type as well as sharpers, pleasure seekers, and riff raff.

A Yale tutor by name of Weedon left an account of many phases of life at Yale during the presidency of Ezra Stiles, 1778-1795. A large assembly room served as chapel, lecture hall and dining room for the approximately 150 students, who habitually complained of the food, which seems to have been plenty and good; nevertheless, dining-hall riots, when food and dishes were hurled about, occurred periodically. For eating between meals, and to sell all sorts of supplies, the College authorized a "Buttery" in one of the buildings, which became a sort of Student Union, restaurant, and book-store. Here also were sold cider, beer, ale, and porter—beverages of relatively low alcoholic content that it was hoped would remove the temptation to seek elsewhere "strong" drink. But the hope proved not to be well founded.

Gambling in one form or another was common among the student body. Lotteries and card games for a stake were popular. Tutor Weedon put it thus: "The muses of learning fled dismayed into the shadows of the night, and the goddess of chance reigned supreme over giddy youth." Prayers must be attended twice a day, at sunrise and between 4 and 5 o'clock in the afternoon on week days, and there were special Sabbath exercises. Frequently, however, prayers did little good, because scholars were wont to stamp so loudly that President Stiles could not be heard. Much of this seems passing strange in light of the fact that in those years a large number of the student body were future candidates for the ministry.

When the migration of population westward got well under way in the years following the American Revolution and in the early decades of the new century, one of the remarkable features of settlement was the early date at which churches, schools and colleges were established in the new communities almost literally in the wilderness. Our fore-

fathers in this period fairly sprayed the country with privately launched and privately (not state) supported and controlled colleges, many of them under denominational auspices, real or merely nominal. Thus the torch of learning was lighted early in each new western settlement before, and in some instances long before, the respective state universities were launched and came to be of great importance.

Today complaints are frequent that the younger generation is no longer subjected to a discipline in the schools that prepare them for college as rigorous as in days of yore. There may seem to be some validity in such complaints when you read the following from the rules of an American preparatory school in 1784: "We prohibit play in the strongest terms. . . The students shall rise at five o'clock in the morning, winter and summer. . . The students shall be indulged with nothing which the world calls play. Let this rule be observed with strictest nicety; for those who play when they are young will play when they are old."

In regard to the number of colleges and the quality of faculty members and students, it is interesting to read in Charles Brockden Brown's *Monthly Magazine and American Review* for April, 1799, the following: "Within a few years past there has arisen in the United States a kind of mania which has had for its object the establishment of Colleges. Scarcely a state in the union but has thought one of these institutions within itself necessary. . . Three-fourths of the colleges in the United States have professors wretchedly unqualified for their station. . . [and] I have known young gentlemen going home with A.B. affixed to their names without being able to construe the diploma [in Latin] which certified their standing."

In 1829 contemporaries were worried about the attitude of the younger generation toward religion, as indicated by the following: "Today, where one child hails the Sabbath with delight, as the day for Bible study, one hundred young immortals are growing up in ignorance and sin. The lamentable extent of dishonesty, fraud, and other wickedness among our boys and girls shocks the nation. . . At [blank] University

the few students who profess religion stand, as it were, alone; to attempt to stem the torrent of vice and immortality there would be considered a freakish innovation."

In 1838 some Harvard scapegraces tried to blow the roof off the college library. Undeterred by failure, they then attempted to demolish the chapel. Thomas Wentworth Higginson, then a freshman, wrote in his diary: "What a sight the chapel presented! About 200 panes of glass blown up, the hands of the clock taken off, the dial stove in, the front panels of the pulpit removed."

Edward Everett, President of Harvard, wrote in 1846: "Dr. Ware commences his lectures to the freshmen class on Wednesday. It is necessary to send in a proctor to protect the Professor from being pelted with chestnuts." Perhaps the students were merely returning "like for like." Later in the same year President Everett wrote to his brother: "I am fighting wild beasts in this my new Ephesus." He remained at his post just eighteen months more and then retired broken in health and spirit.

Andrew D. White, one-time President of Cornell University, comments in his autobiography upon the antagonism with which students regarded their college instructors in the early 1850's. Speaking of experiences at Hobart College, he says: "It was my privilege to behold a professor, an excellent clergyman, seeking to quell a hideous riot in a student's room, buried under a heap of carpets, mattresses, counterpanes, and blankets; to see another clerical professor forced to retire through the panel of a door under a shower of lexicons, boots, and brushes; and to see even the president himself, on one occasion, obliged to leave his lecture room by a ladder from a window, and, on another, kept at bay by a shower of beer bottles."

Two very significant changes in American higher education, that marked a distinct break from the old and the beginning of a new modern period, came in the 1860's: the passage of the Morrill Act by Congress in 1862, and the inauguration of Charles W. Eliot as President of Harvard in 1869.

In the early days of the Civil War it was discovered that our educational system had failed to produce either scientific advancement or scientifically trained practitioners in agriculture and in the mechanical arts—i.e., engineering. Hence it was that in 1862 Congress passed the Morrill Act that offered each state a generous land grant as endowment for a college devoted chiefly to teaching and research in agriculture and the mechanic arts.

The states applied the gift either to enlarging old institutions or to founding new ones. Most of these institutions did not get going until after the close of the war—the year 1867 being the date of the launching of many of the so-called Land-Grant Institutions. From this time on, professional education, not merely in agriculture and engineering but in many other fields as well, became respectable and received more and more attention in institution after institution.

The inauguration of Charles W. Eliot as President of Harvard in 1869 designates a turning point in American Higher Education because he broke the hold of the old fixed curriculum and led Harvard to a greatly broadened and largely elective curriculum. In the field of general education in both small colleges and large universities, emancipation from the old fixed, classical curriculum swept across the country after the example set at Harvard in the 1870's and 1880's and was rather rapidly carried to the extreme of the wide-open elective system. And when I say "wide-open elective system" I mean just that.

When I entered the College of Arts, Literature, and Science of the University of Michigan in 1905 I found a situation that was typical of far too many institutions: for a bachelor's degree there was only one specific requirement, namely, freshman rhetoric; and there was the quantity requirement of 120 semester hours. After taking freshman rhetoric, the catalog was before you, with a list of offerings as numerous and varied as those in a Sears, Roebuck & Co. catalog. Since there were no requirements to insure either breadth or depth of education—no distribution requirements for the junior college period and no concentration or sequence requirements for

the senior college period—extremes of programs ran all the way from some of my classmates who shopped around among many departments and during the four years never took a course above the sophomore level, to others who concentrated almost solely in one department, such as chemistry or mathematics.

Standards of achievement required for graduation can be illustrated by a classmate of mine who, in his senior year, incurred an expenditure for books, notebooks, and all tools of a student that totaled five cents—spent for a small notebook that slipped easily into the side pocket of his coat; and he soon lost that and did not replace it.

Too many students came to think of the whole procedure as a series of little games with a series of instructors, the object of each game being merely to beat the instructor out of a grade high enough for the course to be counted as one of the mystic number required for a degree.

The whole procedure was so much of a dumb-show, with so little real demand made upon the time and talents of the students, that, in order to secure relief from utter boredom, students invented and developed a long list of student activities for entertainment and amusement, as distinguished and utterly divorced from academic pursuits, which were regarded as faculty business and activities rather than as student business or activities.

The development of these student activities reached the point that Woodrow Wilson as President of Princeton University, 1902-1910, complained that the side-shows were overshadowing the main tent. And when, in order to correct the situation, he presented to his Board of Trustees a proposal for his preceptorial program, it is said that one of the Board members, with tears in his eyes and a tremor of emotion in his voice, said: "Gentlemen, I believe Mr. Wilson has designs to make glorious old Princeton into a damned educational institution."

During this period a Chinese student who had spent the first two years of his college course in a university in China supported by American money and conducted in the English

language, came to the United States and enrolled as a senior-college student in one of our larger universities. After living through the hysteria of the football season and the hectic days of fraternity rushing, he wrote to one of his friends back home as follows: "An American college or university is a great athletic association and social club in which provision is made merely incidentally for intellectual activity on the part of the physically and socially unfit."

This was the heyday of wise-cracks at the expense of colleges. The lecture method, which dates back to the days many centuries ago when printed books were scarce, and is inexcusable now except in special instances of demonstrated value, was described as "that method of instruction by which the contents of the instructor's notes get into the notebooks of the students without passing through the minds of either."

Since examinations too frequently amounted to nothing more than the instructor applying pressure to the student to force him to regurgitate isolated bits of information that the instructor had crammed down the student by means of the lecture method, a conundrum was coined: "Why is an instructor reading examination papers like a dog eating frankfurters?" Answer: "He is devouring his own substance in mangled form." And there was the quip about the professor who dreamed that he was lecturing to his class and awoke to find that it was true.

And at the graduate-school level it was said that the writing of a doctor's dissertation consisted of "grubbing inconsequential materials from inaccessible places and burying them in other inaccessible places."

In those days, the early 1900's, the professors and administrative officers of colleges and universities sailed blythely along, doing the same old thing in the same old way, never questioning the why, wherefore, or results of it all, giving every indication that the dumb-show would be perpetuated through another period of dark ages—until they were rudely awakened by a student revolt that at first was spotted geographically but soon became nation-wide, soon after the close of World War I.

In more than one institution, student committees submitted the whole procedure to searching investigation and came forward with reports that were truly remarkable both in their criticism of the current performance and in their recommendations for constructive correction. The faculties of many institutions accepted the challenge wholeheartedly and through committees set up for the specific purpose submitted the higher educational process to a most searching review. The result was that the decade of the 1920's was characterized by a perfect seething of change—reform and experimentation—that spread through nearly every phase of the educational process at the college level.

All of this demonstrated to those educators who are observant and intellectually honest that educational job-analysis is necessary in a time of change; and, since we have been for a generation living in a time of very fundamental changes, and it seems that for at least another generation ahead such changes will continue to be the order of the day, therefore, educational job-analysis is needed and will continue to be needed for an indefinite period in the future.

Some of our higher educational institutions today are keeping faith with their obligations to their students and to society by sponsoring continuous study and job-analysis and actual changes in their programs in the light of demonstrated needs for such changes. Others, however, are interested only in one type of change, namely, growth in size of student body, staff, and physical plant. Their motto continues to be that of the frontier boom-town—"Watch us grow!"—though from the standpoint of educational worthiness they should not be allowed to grow.

Today we have the greatest diversity between not only types of college programs offered but between standards of performance required for graduation, to say nothing of graduation with honors. What was discovered twenty-five years ago regarding standards of performance among high schools and preparatory schools is true of colleges and universities today, namely, that to graduate at all from one institution means more than to graduate with honors from another.

It is up to college and university faculties and administrators to maintain a continuous job-analysis to determine where the college actually stands not merely relative to its competitors but relative to the needs of society in terms of well-defined educational objectives and the extent of their actual attainment.

An Evaluation of the 1953 Seminar on Pharmacognosy*

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As a member of the Committee for the August 1953 Teachers' Seminar on Pharmacognosy and Related Subjects held at the University of Utah, August 10-14, I find myself in somewhat of an awkward position since being asked to comment in detail on a pharmacognosist's viewpoint of this seminar. Obviously, I could be extremely biased, but instead I shall try to be objective.

On behalf of the Program Committee, however, I think it appropriate to say that all of the efforts put into the activity (and the lion's share of these fell on the very able shoulders of Dean L. David Hiner and his spirited Utes) were richly rewarded by the splendid representation of pharmacognosy teachers who attended and also by the appearance and discussions presented by a large number of teachers from allied fields. There were as many as 110 in attendance at times.

The dynamic Lloyd E. Blanch of the U. S. Office of Education, has summarized and critically evaluated the Seminar in his excellent paper which appeared in the October *Journal*.¹

*The excellent summary and evaluation of the 1953 Pharmacognosy Seminar, by Dr. Lloyd E. Blanch, published in the October 1953 issue of the *Journal*, led the Editor to the thought that an evaluation of the Seminar by and from the viewpoint of one trained in that discipline would be of interest to all and of value to the planners of future seminars in any field. Dr. Heber W. Youngken, Jr., was so gracious as to undertake the task.—Ed.

1. Blanch, L. E., *Amer. Jour. Pharm. Ed.*, 17, No. 4, 560-566 (1953).

His committee consisting of two well-known pharmacognosy teachers, Drs. W. R. Brewer and R. A. Deno, has presented eight carefully worded suggestions in this same paper, which in my opinion might serve well as a general guide for the future course of the ship, Pharmacognosy. The Seminar Committee had nothing to do with the framing of these suggestions. They were the product of the listeners. It does, on the other hand, take great pride in the fact that out of the myriad of suggestions which it had received before the Seminar plans were jelled, the program as offered provoked some constructive thought. With few exceptions the problems in teaching and improving pharmacognosy were given a prominent place on the program. Most of the suggestions which were presented by the Blauch-Brewer-Deno critique committee were those which call for a newer and more practical type of pharmacognosy; a pharmacognosy such that "the dynamic phases which are physiological and biochemical in nature, should be emphasized;" a type of science which several teachers have strived for in keeping with modern pharmacy. This was progress which the Seminar Committee hoped for. But these suggestions will have only superficial meaning, if the appraisors of pharmacognosy do not take time to study carefully each part of the Seminar from which they have emerged.

Each paper on the program represented the organization of much thought. It was obvious that its author's expression came from deep conviction and therefore, his objective often became quite meaningful. Unfortunately, there were instances when a Seminar panel fell short of proper coordination. This happened among some topics that were important and which should have been more carefully coordinated. It was especially true on the first day of the meeting when "The Objectives of the Course in Pharmacognosy" were presented. Since this author was at fault along with the others on the panel here, perhaps the criticism is even more appropriate. At any rate, this portion of the Seminar was a difficult one to tie together since it required an expression of objectives. There are many methods for talking about objectives in a science. One can be general or specific. One can be

deductive or inductive. The broader the scope of a science, the more difficult it is for its members to agree upon its most important objectives, let alone the relative importance of all of its specific objectives. The more a modern science touches upon many of the objectives of its closely related sister sciences, the more difficult it is for it to copywrite that which it regards to be its own. This is a common trend as coordination is sought among professional fields. Now when one deals with objectives in the fundamental sciences upon which pharmacognosy is based (e.g. chemistry, biology, physics, etc.) one finds that these objectives are made use of by many other sciences as well. Here then, too, is an avenue of common trade. But one thing is certain. There must be something about one pharmaceutical science which sets it off in a distinctive way from its counterpart. Pharmacognosy as a science has long been regarded to be a study of drug substances from vegetable and animal sources. Students in pharmacognosy have, therefore, the objective of learning something about drugs from natural origin. But what are they to learn by pharmacognosy that is so much different from other sciences (e.g., biochemistry and pharmacology)? The Seminar panel recognized this fact in the title of the first objective which was, "The Study of Natural Products and their Derivatives as Pharmaceuticals." In my opinion, the remaining topics of the panel, namely, "An Organized Approach to Natural Products through the Fundamental Consideration of Cellular Biosynthetic and Structural Processes," "Relationships of Natural Products and their Derivatives to Allied Synthetics of Pharmaceutical Importance," "Integration of Natural Product Study with the Subject Matter of Other Professional Courses," and "The Learning and Proper Use of Scientific Vocabulary Related to Natural Products" should have clearly expressed the distinction that is pharmacognosy by emphasizing these topics as objectives for *implementing* the general study. For indeed, these objectives were intended to develop an organizational plan for the teacher, a plan distinctively different from other similar sciences. As it turned out each

member of the panel developed his topic with insufficient relationship to other topics of the panel and only partially made the distinction clear. Too much emphasis was placed upon each topic as a separate entity or **objective** and many listeners lost the genuine point of the interrelationship among all of the objectives.

It is possible that the aforementioned portion of the Seminar would have been less confusing had the panel selected a few outstanding **student objectives** in the study of pharmacognosy and then proceeded with objectives and means for their implementation. Nevertheless, and apart from my own paper, I believe many constructive thoughts were developed by Claus, Schwarting, Brewer and Quimby, despite the general lack of coordination among all of the panel papers.

The second panel discussion that fell short of its anticipated achievement was that on "Methods of Presenting Specific Didactic Subject Matter in the General Course of Pharmacognosy," during which a single subject (Belladonna) was to have been presented in a characteristic class room lecture fashion by means of three different modes of emphasis, such as: 1. from taxonomic, 2. phytochemical, and 3. physiological viewpoints. Either communications between the experts upon whom this assignment fell were garbled or in some other way the original intent of the Committee was lost, for there was very little difference between Brewer's and Mercer's presentation, and all three authors, including Youngken, Sr., gave a "weeks" lecture and laboratory on Belladonna. The original intent of the planning committee here was for each panel member to present a thirty-minute portion of his typical Belladonna lecture to the Seminararians, each of whom would assume the role of a student. Suffice it to say that pharmacognosy teachers did learn how much can be presented on Belladonna as a drug from the three viewpoints, and they were at the same time intensively reviewed in one case on the classical approach to Belladonna via the plant's vascular highways and fields of parenchyma.

I have thus far dealt with two phases of the Seminar program, which in my estimation could have been greatly

improved. Obviously, there were others and from the corridor comments, it was quite evident that many of the teachers who were present, but who were among the listeners could have done a better job of it. Had their discussions been recorded, posterity could have the complete record and perhaps pharmacognosy would someday reach its utopia before we now expect that it will. It would seriously detract from the published "Proceedings of the Pharmacognosy Seminar" were I to go into detail on each of the papers prior to its publication. This I will not attempt to do. There were three topics presented, however, which I would like to comment on at this time. These were: 1. "Basic Prerequisites Necessary for Achieving the Objectives of Pharmacognosy, 2. "Teaching Methods," and 3. Correlating the Subject Matter of Pharmacognosy and Related Subjects with Other Pharmaceutical Subjects."

General agreement was reached by the Seminar on the basic prerequisites necessary for achieving the objectives of pharmacognosy. These prerequisites are essentially those which have been well expounded by others and definitely place the subject in the third year of a four-year curriculum. In an extended pre-pharmacy and pharmacy curriculum they place pharmacognosy in a position just before pharmacology and dispensing such as in the third year of a one-four plan or in the fourth year of a two-four six-year plan. The prerequisites include courses in biology, organic chemistry, biochemistry, and microbiology. The latter two courses were regarded by some teachers to be permissible corequisite courses. One interesting point emerged from the discussion of "botany and zoology or general biology" as basic prerequisites. It was the re-statement of a fundamental issue among biologists. Will a general one-year college biology course be sufficient for one pursuing the health professions? Or should extensive courses in botany and zoology be required? Needless to say, the question was not answered either by the authors or listeners. It was the same old story of "practical versus ideal." I believe that some of us are inclined to settle for the practical (general college biology) until admission to pharmacy can

be geared to a higher level when more time can be required as it should be for such important basic subjects as botany and zoology. Certainly, Dr. Stephen D. Durrant of the University of Utah expressed well the feeling of a zoologist about the matter when he said, "the greatest incongruity of all to the zoologist is the fact that by their own admission, the pharmacists are dedicated to the welfare of man who is an animal about which they have had little, or no formal training."

The session on Teaching Methods was all too short and we could have benefited with more discussions, such as those by Drs. Angleman and Blauch. These were most outstanding and refreshing philosophical messages. Truly, if the practice of pharmacy is still a combination of art with science and if teaching is a similar combination, then it behooves a teacher to learn as much as he can about the science and the art of teaching. The most significant aspect of this session to me as a teacher was the importance of English, the importance of good expression and wording, the talent of communicating well ideas to a listener; which talent, I believe, was mastered by Angleman and Blauch. Further, a statement made by Blauch struck me rather forcibly as a partial answer to the problem of better teaching. It was, quote, "I am certain that a teacher's service will be improved if he makes an effort to find out how his students learn and if he will then organize and manage his teaching in accordance with that knowledge." Beforehand, I shall want to review well my notes on the "Psychology of Individual Differences." But I believe pharmacognosy teachers would do well to examine their teaching in the manner that Dr. Blauch has thus expressed.

The topics of the Seminar under the general heading of correlating the subject matter of pharmacognosy with other courses and departments of the pharmacy curriculum reminded one of the mathematical equation—the whole is equal to the sum of its parts. For pharmacy as the whole is equal only to the workings of its parts and the summation of all of them. But it isn't exactly that way when it comes to student learning if one attempts to analyze the curriculum for pharmacy more carefully. This was brought out nicely by

the discussions on the point of correlating the subject with other courses in the pharmacy or professional curriculum. It was made clear that the general pharmacognosy course was regarded by the dispensing pharmacist, pharmacologist, and pharmaceutical chemist as a transitional course which in its special field served to bridge the gap of knowledge between that of certain fundamental biological and physical sciences and those of more applied aspects. There seemed to be a demand for more correlation and the need for overlapping when necessary was encouraged. Indeed, this is a healthy sign, for with it there is a recognition of the fact that a curriculum can be closely interwoven and that students by such a situation can more readily appreciate important relationships among their courses. At the same time, however, teachers must be well trained to recognize basic fundamentals and their applications. In order not to duplicate course subject matter unreasonably, there should be frequent interdepartmental contacts. A pharmacognosist must not be merely a pharmacognosist, but in addition a person interested in his University environment and conscious of what is being taught elsewhere within the sphere of his biological and chemical interests. Putting the parts together to make the whole then becomes a gradual transition rather than a sudden one such as all too frequently has been the case in the past.

The general course can, in a similar manner, serve courses in special offerings such as Antibiotics, Immunizing Biological Products, Allergens, and Pesticides which are often associated with the offerings of a pharmacognosy department. There were the usual problems introduced by speakers on these special offerings and although pharmacognosy teachers who handle these courses will agree to the make-up and importance of them as was presented, I question whether the fact that they should all be required courses brought forth general agreement. The most significant point seemed to be that a place should be provided in the curriculum for such courses, preferably in the pharmacognosy department, and that should they not be required for all students, then the general pharmacognosy course should, through its lecture and laboratory

program, be expanded to include something about these subjects.

There were, indeed, several worthwhile laboratory demonstrations or exercises suggested in Claus' paper on allergens and Quimby's topic on pesticides. As a pharmacognosist interested in the laboratory phase of the general course, I would like to have seen these further elaborated upon during the session on "Contribution of the Laboratory Instruction to the Objectives of Pharmacognosy." In my opinion, the laboratory sessions which preceded the discussion of these special topics followed too much the same theme—macroscopic, microscopic, and microchemical exercises. If the general course is to include the introduction to special offerings, then that phase of the didactic course pertinent to these offerings should be supported by laboratory exercises. Here is where student enthusiasm toward advanced required or elective courses can be generated. On the other hand, there was general uniformity in the nature of the general pharmacognosy laboratory as described by Albers, Gibson, Reese, and Hoch. It would seem from this and from the discussions of listeners that pharmacognosists are quite clear on the type of exercises which make up most of the laboratory study. But additional laboratory techniques in other phases of the general course, such as physiological features of drugs, could be very valuable and, as a pharmacognosy teacher, I would like to have heard the viewpoints of others on this.

The Seminar's discussion of the graduate program in pharmacognosy was confined to a fraction of the time allotted for the undergraduate course. This was unfortunate, but nevertheless, several important topics were discussed. The suggestion by Pratt that worthy students in other biological or chemical fields who show an interest in pharmacognosy be encouraged to do graduate work in pharmacognosy certainly has merit and I agree with this idea. Minimum requirements for a modern pharmacognosy department mean a well equipped physical plant as pointed out by Schwarting. A pharmacognosy teacher should seek good chemical and physiological laboratory apparatus and space. Certainly the days of graduate work with only a microscope, hand lens and

camera-lucida have long since passed. As it had also been clearly shown earlier by Youngken, Sr., the drug plant garden is a most important attribute for the graduate program and this facility should be fostered wherever possible. It was encouraging to note that graduate work in pharmacognosy has reached a stage where the physical facilities that are required parallel those of other fast progressing biological and chemical fields.

The University of Michigan teacher-training program under the direction of Richard Deno was described for pharmacognosy teachers. This program provides a fine stimulus for learning teaching methods and is a unique program among the health professions. Fingl and Parmely of the University of Utah faculty also added much to the program with their fine discussions on statistical methods and radioactive tracer techniques respectively. It was obvious from the discussion of all of these topics, objectives, physical requirements, etc., that pharmacognosy graduate teaching and research has entered an ambitious future; that students and faculties must keep up constantly with the developments in biology, chemistry, and physics in order to keep abreast with the research of the future. The Seminar has added its stimulus to what has already been provided; from here on it is up to the teacher to carry the torch.

In conclusion, it is my feeling as I look back upon the accomplishments of the Teachers' Seminar in Pharmacognosy from an objective point of view that in general, its objectives were accomplished. I only regret that I lack the space to mention more here about them and I apologize to those who participated and to whom I have not made reference. There were several good ideas made available by almost everyone for teachers of pharmacognosy. General agreement was reached on the scope of the undergraduate course. Agreement was not entirely reached on what should be the emphasis during the implementation of the general course. Perhaps it can be said that most appeared to favor implementing the general objectives by emphasizing biochemical and physiological aspects in pharmacognosy. The several suggestions offered by Blauch's committee¹ cover the thinking of the

Seminarians very well. I would say that it very definitely was good that pharmacognosy teachers were able to meet together this way.

The spirit and friendliness of the University of Utah staff under the leadership of L. David Hiner could hardly be surpassed. The esprit-de-corps supplemented by the cool summer breezes from the sunny Wasatch Mountains, the pioneer lure of the Mormon people, and the very efficient run of things for the Seminar made it a most memorable occasion. Finally, none of this could have been made possible without the far sightedness of the American Foundation for Pharmaceutical Education and leaders of the AACP to whom a debt of gratitude is due.

A Special Cooling Device for the Preparation of Molded Suppositories in the Laboratory*

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In order to achieve satisfactory results in the preparation of molded suppositories in the laboratory, students must be provided with an efficient and convenient method of refrigeration for the chilling of the molds. Not only must the molds be properly cooled prior to the pouring of the melted suppository mass, but the filled molds must be thoroughly chilled so that the suppositories will harden sufficiently to ensure easy removal. It is generally agreed among teachers of pharmacy that the lack of proper refrigeration facilities, which are required in this course of laboratory instruction in suppository manufacture, constitutes one of the major causes of failure to obtain satisfactory results.

*Read before the Section of Teachers of Pharmacy at the 1953 meeting in Salt Lake City.

The use of a refrigerator for this purpose is highly desirable because of the efficiency that is achieved and because the procedure simulates the method that the student is expected to use in actual practice. In all probability, the dispensing laboratory, in which small groups of students are working under the same conditions that prevail in modern prescription pharmacies, is equipped with an electric refrigerator that may be used in operations that require chilling at low temperatures. It should be emphasized, however, that the entire group, consisting of ten or fifteen students, would not be preparing only suppositories during a given laboratory period. Rather, only one or two students may be compounding prescriptions for them. Therefore, crowding at the refrigerator, undue delay and inconvenience would not be factors in the operation of the laboratory.

In contrast, the use of the refrigerator for the same purpose in the operative pharmacy laboratory, which accommodates a relatively large group of students, perhaps a hundred or more, and in which the entire group may be preparing only suppositories during an assigned period, is impracticable. Such a laboratory is probably not equipped with a refrigerator, and, even if it were, an attempt to use it in an assignment under the conditions just mentioned would not be feasible. Consequently, recourse is usually had to the use of ordinary ice as a means of refrigeration in the teaching of the fusion method, each student preparing an ice bath for the purpose.

Unlike the cooling in the refrigerator, this procedure does not give a properly pre-chilled mold nor does it cool the mold sufficiently to allow the mass to contract so as to enable the operator to remove the suppositories from it without difficulty. Furthermore, re-icing of the refrigerating bath is necessary at frequent intervals during the laboratory exercise. Also, there is a possibility of seepage of water into the mold when the ice melts; and, for this reason, it is inadvisable to use ordinary ice as a refrigerant in the preparation of suppositories that are formulated with the water-soluble vehicles. Teaching experience has shown that this method

of refrigeration is inefficient, time-consuming and inconvenient, and that, too frequently, it results in student failure.

Although solid carbon dioxide, commonly known as *Dry Ice*, has been employed as a source of low temperatures in large-scale production of suppositories in pharmaceutical manufacturing plants, its use for chilling suppository molds in the student laboratory has not been suggested in the literature. It is probable that the unavailability of a simple, inexpensive and efficient cooling unit, employing *Dry Ice* and suitable for the purpose under discussion, has been a factor in not considering the feasibility of using the method in the teaching laboratory.

The advantage of *Dry Ice* as a refrigerant over ordinary ice is not only in the fact that it has a rapid refrigerating effect but also that it cools to much lower temperatures. Instead of melting, it evaporates to a dry gas, in itself an excellent cooling agent, leaving no liquid residue such as that which results when water ice melts. Because it can be kept in small containers for several hours, much longer intervals are possible between re-icings.

Recognizing that these properties would make *Dry Ice* a useful refrigerant for cooling suppository molds in the student laboratory, the writer and his associates devised a simple and inexpensive cooling apparatus that has been used in the laboratory exercises on molded suppositories in the course in Pharmaceutical Preparations as a replacement for the ordinary ice bath.

The apparatus consists of an *all steel* utility cabinet, measuring 10" x 11½" x 10", with removable drawers, 9" wide, 11½" long and 2" deep. The drawers are equipped with index card holders and pulls on the front. It is made of *heavy gauge* steel and has a *steel gray ripple* finish. All of the drawers have safety stops to prevent spilling of the contents. The cabinet is shown in Figure 1.

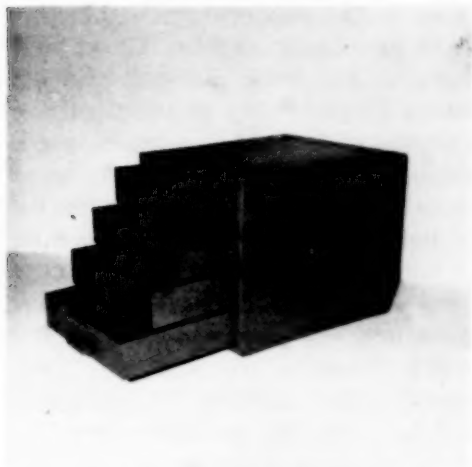


Fig. 1—Cooling device for chilling suppository molds.

Prior to a given laboratory period, the apparatus is charged by placing a slab of *Dry Ice*, weighing approximately five pounds, in the upper and lower drawers as shown in Figure 2. The two middle drawers are reserved as chilling compartments for the suppository molds.

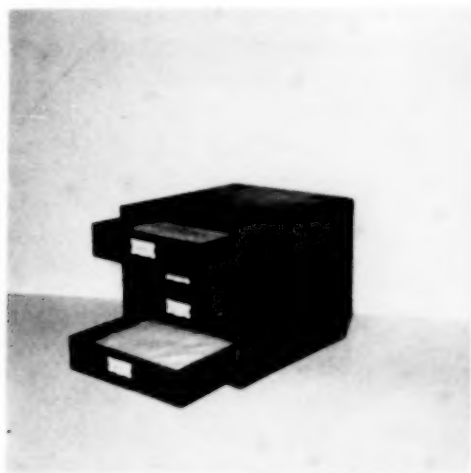


Fig. 2—Cooling device showing use of *Dry Ice* as a refrigerant.

The lowering in the temperature within the two chilling compartments is strikingly rapid. Three to five minutes after the apparatus has been charged, the temperature in these two drawers drops twenty to twenty-five degrees, and, even before a period of ten minutes has elapsed, the temperature in them drops below 0°C . Although the advisability of insulating the cabinet was considered, experience has indicated that insulation was not needed since one icing was adequate for a laboratory period of four hours; and, repeated experiments have shown that, during this interval, a relatively constant temperature, $-2 \pm 5^{\circ}\text{C}$., could be maintained in the two chilling compartments.

With the cooling device ready for use, approximately ten minutes after it has been charged with *Dry Ice*, the suppository molds are placed in one of the two middle drawers and prechilled for about five minutes. Then, the melted suppository material is poured into the cavities and the molds are placed under refrigeration for one or two minutes; and, after the excess material is sliced off from the bases of the suppositories, the molds are again placed in the chilling compartments, as shown in Figure 3, and allowed to cool sufficiently, about five to ten minutes, to ensure removal of the suppositories without difficulty.

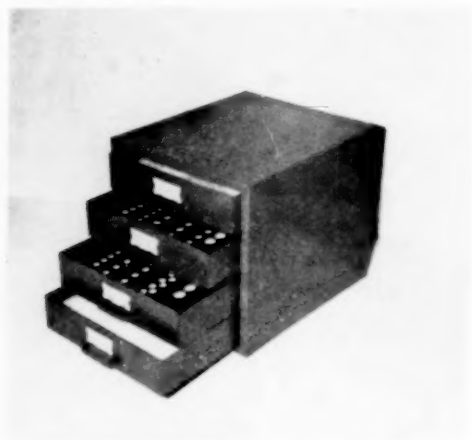


Fig. 3—Cooling device showing molds in the chilling compartments.

In the student laboratory, one of these cabinets may be assigned to ten or twelve students, and it may be used by such a group without crowding and undue delay in an exercise requiring the preparation of three or four sets of molded suppositories. In order to accommodate a group of one hundred or more students who may be working in the laboratory at one time, ten or more of these cooling units may be placed in suitable locations in the laboratory, thus ensuring convenience and efficiency.

It was emphasized earlier in the discussion that the apparatus is inexpensive. The actual cost of the cabinet is less than five dollars. It should also be noted that its operation is not too costly. *Dry Ice*, cut into slabs weighing approximately five pounds and delivered to the institution, may be purchased for five or six cents per pound in quantities of one hundred pounds or more.

In summary, the cooling device described in this paper offers several desirable features as a means of chilling suppository molds.

1. It is simple and inexpensive.
2. It may be conveniently moved around and easily stored.
3. The apparatus is especially suited for use in the laboratory in the teaching of the fusion method of suppository manufacture to large groups of students.
4. Since *Dry Ice* leaves no liquid residue, there is no contaminant, such as that which results when ordinary ice melts, to affect certain suppository bases. The method may be employed, therefore, in the preparation of suppositories that are formulated with any of the commonly-used vehicles.
5. The apparatus is much more efficient than the ordinary ice bath not only because a lower temperature is obtained but also because a rapid cooling effect is achieved. The suggested method is, therefore, less time-consuming. Experience in the laboratory with a group of one hundred students using ten of these devices has shown that delay and inconvenience are at a minimum. At the same time, failure by students to obtain satisfactory results in the fusion method of suppository manufacture is practically eliminated.

Lavoisier's "Chemical Revolution" and Pharmacy

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There have been hypotheses explaining the one or the other chemical process since the early days of chemistry. It was, however, not until the late seventeenth century that a theory was developed allowing a plausible explanation of the most important operations known at the period, hence offering a basis for systematic work. This theory, centering around the hypothetical principle of fire or inflammability as a material substance attached to everything combustible, had been fathered by the German chemists J. J. Becher (1635-1682) and Georg Ernst Stahl (1660-1734). It had been the latter who had developed the ideas of Becher to a complete system and coined the name of phlogiston (from Greek *phlogistos* = burnt, inflammable) for the substantial principle of combustion.

Sure, there still were left various peculiarities for which at the time being no satisfactory explanation could be found, foremost among them the fact that the products of calcination supposed to have lost their "phlogiston" were not lighter but heavier than the original amount of metal calcined. This, however, could be left to the future and was no reason to abandon an otherwise a so convenient theory.

This explains why Lavoisier met with so ardent and stubborn opposition when, in the last quarter of the eighteenth century, he offered proof for the impossibility of the phlogiston theory and suggested his new system, centered around the role played by oxygen in the process of combustion. The chemists of this time had achieved all their most remarkable results on the basis of the phlogiston theory. They were not willing to give it up until they were definitely convinced of the correctness of Lavoisier's experiments and the all around adaptability of his theoretical conclusions.

* Presented under the auspices of the American Institute of the History of Pharmacy at the 1953 meeting in Salt Lake City.

While this fight as such is in general well known, it is less known or at least noticed that it was to a rather great extent chemists coming from pharmacy who took part in it, and that the practical necessities of pharmacy made these people inclined to accept the theories of Lavoisier. It was the demand for a simplification and purification of the *materia medica* and for a simple chemical nomenclature, based on a clear scientific system, which could be satisfied by the suggestions of Lavoisier and his friends.¹

It was especially in Germany that the fight for and against the "antiphlogistic"² theory was fought and finally decided.

It is understood that the new nomenclature was not immediately accepted by those who were grown up as phlogistonists. Still in 1791, four years after its publication, the following opinion was expressed by one of the best known contemporary German apothecary-chemists, J. C. Wiegleb:³

"The French chemists," Wiegleb said, "have had the idea to draft an entirely new artificial chemical language. This language, however, has even in France not met with general approval. The foreigners have condemned it with One [unanimous] Voice." Quoting this statement of Wiegleb, the great historian of chemistry, Hermann Kopp, states:⁴ "Wiegleb was mistaken; still before 1800 the new nomenclature had become a part of the German language and was used by the majority of the chemists. Among those who about 1800 tried successfully to introduce this nomenclature in Germany and have in general done very much for the development of the German artificial chemical language, are

1 These suggestions of a new and simple nomenclature appeared in 1787 under the title *Methode de Nomenclature Chimique* and were authored by Lavoisier, Berthollet and Fourcroy.

2 It is significant for the recognition of the phlogiston theory as a convenient and satisfactory explanation of the chemical reactions known at the end of the eighteenth century, that in the discussion the theories and suggestions of Lavoisier were mostly defended or fought not as "oxygen theory" (or called by the name of their originator) but as "antiphlogistic" theory. Hermh. staedt even went so far in his translation of Lavoisier's *Traite elementaire de Chimie* (1789) to change the title to *System der antiphlogistischen Chemie* (1792).

3 Johann Christian Wiegleb (1732-1800), was the owner of a pharmacy in Langensalza, with which he had connected a well known school of chemistry. He was the author of a number of scientific and historical publications and textbooks. "German pharmacy and scientific chemistry are much indebted to him", says Kopp (*Geschichte der Chemie*, 1843-47, 3. part, p. 49).

4 H. Kopp, l.c., 2. part, p. 419.

especially to be mentioned Gren⁵ (who made it known in Germany, without adopting all dogmas of Lavoisier's theory) and Gilbert, who, being the editor of one of the best German scientific journals was in a particularly good position to meritoriously work in this direction."

Quite a number of contemporary chemists recognized the new "French" chemistry, "without adopting all dogmas of Lavoisier's theory." One of the main representatives of those attempting a compromise was the apothecary-chemist, J. F. A. Goettling (1755-1809), a pupil of Wiegleb and from 1789-1809 Professor of Chemistry and Pharmacy at Jena. One of the earliest German supporters of the fundamental ideas of Lavoisier, Goettling had to defend himself against the vehement and sometimes even vicious attacks of those German nationalists to whom, like Lorenz von Crell,⁶ the fact that these ideas had been suggested by a Frenchman was reason enough to stubbornly reject them.

These difficulties have found a rather curious confirmation by the way in which another prominent contemporary German apothecary-chemist, Johann Bartholomaeus Trommsdorff (1770-1837) tried to avoid them. Owner of a pharmacy, Professor of Physics and Chemistry at Erfurt, proprietor and director of an educational institute for pharmacists, and editor of the *Journal der Pharmacie* which he had founded in 1794, Trommsdorff did not think it advisable in this time of heated argumentation for and against the new "French" chemistry to side too definitely with the reformers. Kopp, after having told that "Crell still in the beginning of this [the nineteenth] century openly adhered to the phlogiston theory," states that "Trommsdorff in 1796 joined the anti-phlogistonists."⁷ This statement cannot, or only very conditionally, be verified.

It is correct that Trommsdorff in his *Lehrbuch der pharmaceutischen Experimentalchemie fuer praktische Apoth-*

5 Friedrich Albert Carl Gren (1760-1798), a physician-chemist who has started his career as a pharmacist, was from 1787 until his death Prof. of Natural Science at Halle. In 1790 he founded the *Journal der Physik* which since 1793 was continued by Gilbert under the title *Annalen der Physik*.

6 Lorenz von Crell (1744-1816), Prof. at Helmstedt, author and translator of quite a number of chemical publications, was especially known and influential as editor of the *Chemische Annalen*.

7 H. Kopp, l.c. 3 part, p. 160.

cker und Ärzte (Textbook of pharmaceutical experimental chemistry for practising pharmacists and physicians), published in 1796 and dedicated to the parents of the students attending his institute, used the ideas of Lavoisier as his theoretical basis. However, in his *Journal der Pharmacie* he denies very definitely that, in doing so, he has sided with the antiphlogistonists.⁸

"As to the theoretical part" [of the "Lehrbuch"], Trommsdorff points out, "the author has followed the new system entirely, yet without being its blind adherent. He has chosen it merely because of its beautiful continuity and because of its conceptional harmony; partly also because he is of the opinion that all those who understand this system will not have any difficulties to adjust themselves to other systems."

His acceptance of the new nomenclature was minimized by Trommsdorff with the remark that he had listed in his book the old terms likewise, hence those using the book could make their own choice. The shrewdness, with which Trommsdorff operates, grown out of the conflict between scientific and economical considerations, is so obvious that it is almost amusing. There can hardly be a stronger contrast than the definiteness and calm objectivity with which still another German apothecary-chemist, Martin Heinrich Klaproth,⁹ had faced the same problem already four years before the appearance of Trommsdorff's "Lehrbuch." Kopp reports the following:¹⁰

"The merit to have done most for the recognition of the anti-phlogistic theory in Germany goes to Klaproth. In no other country had the phlogistic system taken so deep roots; besides, a certain nationalistic sentiment that in those days just in scientific circles expressed itself most strongly, made the German chemists unwilling to desert the system of Stahl, their compatriot, and to accept instead the modern 'Chimie Francaise'. This was all the more the case, since just those French chemists who had fought the new system most stub-

8 *Journal der Pharmacie*, vol. 4, (1797), p. 341-46.

9 Martin Heinrich Klaproth (1743-1817) remained the greater part of his life a practising pharmacist doing his many scientific investigations in the back-room of his pharmacy. He discovered several elements and has been considered the father of modern analytical chemistry. He was the first Professor of Chemistry at the University of Berlin. (1809-17).

10 H. Kopp, I.c.I part, p. 345.

bornly, now, as converts, showed a particularly insolent attitude. Free of any prejudice, Klaproth subjected the question whether the phlogiston hypothesis could be retained or was to be discarded to a calm examination; in 1792 he suggested to the Academy of Science at Berlin to subject the experiments [of Lavoisier] concerning combustion and calcination to an exact revision. The results confirmed Lavoisier's statements and the conclusions drawn by him, and Klaproth and the other scientific members of the Academy became adherents of the anti-phlogistic system. They set an example which soon was followed by the majority of the better German chemists."

Klaproth's activities in the interest of the dissemination of the true facts as far as the problem under consideration was concerned was simultaneously, and in the most fortunate way, supplemented by a friend and younger colleague of Klaproth. The manager of the Royal Court Pharmacy at Berlin and later—from 1819-1833—Professor of Chemical Technology the University of Berlin, Sigismund Friedrich Hermbstaedt (1760-1833), published in the significant year 1792 an annotated translation of Lavoisier's *Traite elementaire de chimie* which helped considerably to make the "French" chemistry known and popular in Germany. Eleven years later, in 1803, in the preface to the second edition of this translation, Hermbstaedt proudly wrote the following:

"It was not without humility that I took the risk to offer to my German compatriots a translation of this book [Lavoisier's *Traite elementaire de chimie*] accompanied by some additions and comments; for at that time it was a crime if somebody did not follow obediently the German leaders in the fight for the phlogiston theory; and if one dared to think for himself with his mind unchained, he was helplessly exposed to every kind of mistreatment. I, however, was not afraid of the crucifixion with which I was threatened. My translation appeared on German soil; my comments supported the new theories mentioned; and I flatter myself, by doing this, to have contributed my share to the fact, that the importance of the new system was soon generally recognized in Germany and that the fundamental principles involved were generally accepted."

"That now," i.e., in 1803, "even the most ardent phlogistonists have sworn allegiance to the flag of antiphlogistonists" was taken by Hermstaedt as proof for his optimistic view "that truth remains victorious."

Not only in Germany, but in England likewise it was a pharmacist who gave to his compatriots who were not able to read French a first authentic insight into Lavoisier's way of thought. It was one of the early publications of the great Frenchman, his *Opuscules physiques et chymiques* (Paris 1774) dealing with the calcination of the metals, a translation of which into English was published in 1776 by the apothecary Thomas Henry.¹¹ A translation of Lavoisier's *Traite elementaire de chemie* into English by Robert Kerr appeared in 1790.

One year later, in 1791, Lavoisier's theories were presented in a book particularly designed for the information of pharmacists: the third edition of "*The Edinburgh New Dispensatory. . . Being an Improvement of the New Dispensatory by Dr. Lewis.*" The author of the book, Andrew Duncan, Sr., announced this synopsis rightly as "a full and clear Account of the New Chemical Doctrines published by Mr. Lavoisier."

"As the new chemical doctrines," says Andrew Duncan jun., "under the name of the antiphlogistic theory, have acquired great celebrity, and are making rapid progress to overturn the theories of phlogiston, so long followed by chemical philosophers, it is presumed that a general view of the principles of the new doctrine will not be unacceptable to most readers. . ."

The glory to have issued the first official pharmacopoeia adopting "the principles of the new doctrine" goes to Spain. In 1794, in the same year in which Lavoisier was decapitated as a victim of the French revolution, appeared the first edition

¹¹ Thomas Henry, (1734-1816), was a pharmacist in Manchester and known for his work in chemical technology and his general interest in the arts and sciences. For a number of years he was the president of the Manchester "Literary and Philosophical Society".

of the *Pharmacopoea Hispana*. "Spain," says Rafael Folch y Andreu, Professor of the History of Pharmacy at the University Madrid, "honored his [Lavoisier's] memory through the national pharmacopoea, in the preparation of which the pharmacists, belonging to the *Audiencia de Farmacia* founded in 1780, most actively had participated; since the new chemical nomenclature was applied, this meant considerable scientific progress.¹²

Five years later, in 1799, the pharmaceutical world was presented with the first edition of the *Pharmacopoea Borussica*. Since the preparation of this book was essentially in the hands of Klaproth, Hermbstaedt and Valentin Rose, Jr., a pupil of Klaproth, it is understood, that it was based on the new chemical theories and adopted the new nomenclature. As far as the abandonment of antiquated compounded drugs is concerned, the *Pharmacopoea Borussica* goes much farther than the "Pharmacopoea Hispana." In England, the Spanish and Prussian example was followed by the *Pharmacopoeia Edinburgensis* in 1803, and by the *Pharmacopoeia Londinensis* in 1809. It is significant that in 1808 the fathers of the *Pharmacopoeia of the Massachusetts Medical Society* based their book on the Edinburgh and not the London Pharmacopoeia, because then only the former had adopted the new chemical principles.

From then on, that means since the early nineteenth century, no official pharmacopoeia has appeared that has not been based on the "new chemistry." It is understood that simultaneously the cooperation of pharmacists in the preparation of pharmacopoeias has been sought for and became an established fact to an ever increasing extent.

12 R. Folch y Andreu: "Die praehispanischen offiziellen Pharmacopoen und die Mitarbeit der Pharmazeuten" in *Die Vortraege der Hauptversammlung in Basel, Gesellschaft fuer Geschichte der Pharmazie* 1934, p. 212-223.

The University of Arizona College of Pharmacy*

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It has been the privilege of those responsible for the founding of the University of Arizona College of Pharmacy to watch it progress in a few years through a development on which a number of other pharmacy schools dwelt for a period of a century. Whereas the schools which pioneered in pharmaceutical education searched out each volume of their long and famous histories, the newer ones have been built rapidly on the foundations of past experience and now have the opportunity to expend their youthful vigor in helping to improve the pharmaceutical education of the future. Such has been the opportunity and will be the privilege of Arizona's new college.

A number of practicing pharmacists in the so-called "Baby State" have witnessed practically its entire pharmaceutical development, from territorial times to the present. They recall the French-Canadian pharmacist, Thibodeaux, who set up shop in the Salt River Valley about 1880 and who nightly protected his property by sleeping on a cot in the doorway. They remember the frequent occasions on which the "free booters" were carried feet foremost into the drug shop and laid on the floor for attention to their bullet wounds. They saw the opening of the University of Arizona in 1891 on forty acres of desert land donated by three wealthy gamblers—outstanding citizens of the town of Tucson. They

*This is the second of a series of papers, requested by the Editor, of those persons who are in a position to record, with accuracy, the beginnings of the more recently established Schools of Pharmacy in order that these beginnings may become a part of the record of the development of Pharmaceutical Education in America. The first paper of the series, written by Dean Stanley C. Mittelsteadt, gave the early history of the School of Pharmacy of the University of Arkansas.
—Ed.

recall that one of the first three regents of the institution was dispatched by renegade Indians. They were present at the organization of the Pharmaceutical Association of Arizona in 1910 and its reorganization in 1922 with "encouragement of pharmaceutical education" as one of its major aims. They also were present at the Association meetings in 1924, 1928 and 1929 when proposals for a school of pharmacy in the state were discussed but not approved. The element of gamble in the survival of such a highly esteemed development was not acceptable to these men. Therefore, it was not until 1946 that the Association petitioned the Board of Regents of Arizona's institutions of higher education for the establishment of a pharmacy school which was destined to be activated at the University in Tucson on September 7, 1947, and to become one of the pioneers in advancing pharmaceutical education beyond the four year level. Thus, within the life span of a man, history has unfolded in Arizona a development which in some of our earlier states has not even been attained in three generations.

Many will label the progress of the new colleges and schools as abnormal and perhaps unhealthy; but none can deny that this same type of youthful progressiveness, employing to advantage the experiences of its antecedents, has carried the United States to a position of leadership in the society of nations.

The vigorous development of the Pharmacy College at Arizona may be attributed to its phenomenal support by the pharmacists throughout the state. Their loyalty to and interest in the College is a continuing contribution to a long-sought goal. The magnanimity of individual persons and organizations in both retail and wholesale pharmacy has been manifested, on behalf of the students, by provision of funds for scholarships and for transportation. Interest was even found outside the fold of pharmacy in the Tucson club of an international organization of executive and professional women which encourages women students in the study of pharmacy by means of a scholarship award for this College.

The academic year, 1947-48 found the School of Pharmacy organized and operated under the direction of Dr. Rufus A. Lyman, as a school within the College of Liberal Arts. The fact that Dr. Lyman, whose efforts on behalf of American pharmacy are known everywhere, became the first Director and, in 1949, the first Dean of the newly established College, has bestowed upon the school a rich and impressive heritage. Evidence of the appreciation which Arizonans have for Dr. Lyman is tangibly expressed in the form of a bronze casting of his famous features sculptured by Dr. Avarð Fairbanks, Dean of the College of Fine Arts of the University of Utah, and mounted within the entrance to the Pharmacy College. Dr. Lyman is the only living person thus honored on the University of Arizona campus. Under his guidance the four year curriculum was developed, a five year curriculum was considered and the first class was graduated in May, 1950. Shortly thereafter, Dean Lyman resigned and returned to his work and home in Lincoln, Nebraska, his mission in Arizona completed.

In July, 1950, the College received a new dean, Dr. Haakon Bang, professor of pharmaceutical chemistry from Washington State College. He enlarged upon the modern pharmaceutical equipment of the College, established a program of graduate work leading to the degree, Master of Science in Pharmacy, and completed the development of the five year curriculum which was initiated in 1951. Dean Bang abolished departments in the College to simplify problems of administration and enlarged the faculty to provide doctorate personnel in each division of pharmaceutical study. Under his guidance, the first graduate degree was awarded and a class "A" accreditation received superseding the former "Y" accreditations. In June, 1952, Dr. Bang resigned from the deanship to return to a similar position at Washington State and was succeeded by Dr. Willis R. Brewer, professor of pharmacognosy in the College.

Until July, 1949, the school was housed in temporary buildings made available following the cessation of World War II hostilities. Thereafter, the College was moved into the

newly constructed wing of the Chemistry-Physics Building located near the center of the beautiful, palm-dotted campus of the University. Additional space assignments were acquired in 1950, 1952 and 1953 increasing the physical facilities to consist of:

Laboratories—beginning pharmacy, pharmaceutical chemistry, pharmacognosy, greenhouse and medicinal plant garden, pharmacology, animal colony, manufacturing, dispensing, graduate study and faculty research.

Lecture Rooms—three within the Pharmacy Annex seating 185, 60 and 35, and five in the Chemistry-Physics Wing seating 260, 105, 50, 45 and 35.

Stockrooms—one main supply center and one supplementary room on each of the three floors of the Pharmacy Wing.

Offices—two rooms constituting the general office and six combination office and research laboratories for full time faculty members.

Beginning with a total of four staff members in 1947, new faculty members have been added annually to bring the 1953 complement to seven teachers, four of whom possess the Ph.D. degree and six of whom are registered pharmacists. A secretary and a storekeeper complete the full-time staff. A lecturer and two graduate assistants are employed part time. Two faculty members of the College of Business teach courses in pharmacy administration. The youthfulness of the College is repeated in the youthfulness of the faculty as the average of the ages of the full-time faculty members is only 36 years.

From the simultaneous institution of both a freshman and a sophomore class in September, 1947, to the present time, the basic aim of the College in preparing students for a lifetime of service in pharmacy has never changed. With pharmacists remaining in service in their communities as long as four and five decades, a graduate needs not only to be both practical and professional at commencement time, but he needs to be prepared to employ moral and investigative thought year after year as a prophylactic measure against his professional decline. Further, he needs to be prepared as a community leader as well as a health scientist. With this type of preparation for each graduate as the goal, it became ap-

parent to the administrators and faculty members of the College that certain steps should be taken toward providing it. Thus, a five year curriculum was proposed even before the first class was graduated under the four year plan. Finally, a quinquennial curriculum permitting expansion into sociology, political science, speech, business principles, and accounting and also a more efficient sequence of professional courses and their prerequisites was approved for the September, 1951, beginners in Pharmacy. The first class of students on this program will be graduated in the spring of 1955. Attention was also paid to the provision of a wholesome, supervised program of extracurricular activities with emphasis placed upon the service which the student may render the organization rather than receive from it. Awards were made available through the generosity of Arizona pharmacists to stimulate scholarship, leadership, pharmaceutical technique and undergraduate research in all phases of pharmacy. Finally, vocational guidance information was compiled and disseminated to high school students acquainting them with the nature of the profession and advising them on preparatory course selections.

In the planning and operation of the Arizona curriculum and in the guidance of its students, the faculty has served as a cooperative unit, improving its efficiency with experience. Through weekly or more frequent faculty meetings, discussions of old and new problems result in the development of policies concerning teaching methods, course content, student activities and college operation and administration.

The performance of the students in response to these efforts has been encouraging. A total of 149 have been graduated in the four classes finished thus far. Of this number, 43 percent won graduation or class honors. Nine percent already operate pharmacies or fill managerial positions. Three percent are enrolled in medical colleges. A graduate of the class of 1952 was honored as the recipient of the Kilmer Prize for that year. As many as five Arizona graduates have been sought for a single pharmacy as a result of the commendable performance of the first employed.

Statistics are being compiled for comparing the records of the past classes with those of the future, five year graduates. The curriculum which the latter will pursue consists of the following courses:

PRE-PHARMACY YEAR

(Registration in College of Liberal Arts)

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Eng. 1a (Fresh. Comp.)	3	Eng. 1b (Fresh. Comp.)	3
Chem. 1a, or 2a (General)	4	Chem. 1b, or 2b (General)	4
Math. 20 (Algebra)	3	Math. 24 (Trigonometry)	2
or		Botany 2 (Plant Kingdom)	4
Math. 22 (Algebra)	5	Mil. Sc.	1
Zoo. 4a (General)	4	Phys. Ed.	1
Mil. Sc.	1	Elective	2
Phys. Ed.	1		
Total 16 or 18		Total 17	

(Admission to the College of Pharmacy is based upon the completion of the above courses with an accumulative grade average of 3.0 or better.)

FIRST YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Pharm. 3 (Orientation)	1	Chem. 10 (Qualitative Analysis)	4
Chem. 140a (Organic)	4	Chem. 140b (Organic)	4
Physics 2a (General)	4	Physics 2b (General)	4
Pharm. 10 (Calculations)	2	Soc. 81 (Introduction)	3
Econ. 1a (Introduction)	3	Mil. Sci. 2b (men)	1
Mil. Sci. 2a (men)	1	P. E. (women)	1
P. E. (women)	1		
Elective	1		
Total 16		16	

SECOND YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Subjects	Units	Subject	Units
Pharm. 1 (Principles)	4	Pharm. 2 (Elementary Preparations)	4
Chem. 22 (Quantitative Analysis)	4	Pharm. 100 (Inorganic)	4
Zool. 23 (Mammalian Anatomy & Physiology)	4	Zool. 24 (Mammalian Anatomy & Physiology)	4
Speech 2a (Principles)	3	B.A. 33 (Accounting)	3
Elective	2	Elective	2
Total 17		Total 17	

THIRD YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Subjects	Units	Subject	Units
Pharm. 108 (Quantitative)	3	Pharm. 106 (Advanced Preparations)	4
Pharm. 107a (Organic)	3	Pharm. 107b (Organic)	3
Pharm. 121a (General Pharmacognosy)	4	Pharm. 121b (General Pharmacognosy)	4
Bact. 107 (General)	4	Chem. 160 (Biochemistry)	3
Poli. Sci. 51a (American Gov.)	3	English 23 (Business English)	3
Total 17		Total 17	

FOURTH YEAR

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Pharm. 110a (Dispensing)	4	Pharm. 110b (Dispensing)	4
Pharm. 112 (Pharmacy Management)	3	Pharm. 113 (Commercial Pharmacy)	3
Pharm. 131a (General Pharmacology)	4	Pharm. 131b (General Pharmacology)	4
Pharm. 136 (Remedies)	4	Pharm. 135 (Public Health and Medical Emergencies)	4
Elective	2	Elective	2
Total 17		Total 17	

Total required for graduation 166 units

Graduate study leading to the degree, Master of Science in Pharmacy, was made the subject of faculty study in 1950 when advanced courses were offered on a limited scale. The emphasis was in pharmaceutical chemistry. Pharmacognosy was included in 1951. The following courses providing major specialization in these two fields as well as in pharmacology and general pharmacy were developed during the 1952-53 academic year:

<i>Course</i>	<i>Units</i>
Pharmaceutical Formulations	3
Manufacturing Pharmacy	3
Drug Plant Principles	4
Drug BioAssay	4
Advanced Pharmacology	4
Advanced Drug Detection ..	4
Chemistry of Medicinal Agents Affecting the Central Nervous System	4
Steroid and Related Medicinal Agents.....	4
Seminar	1
Research	2 to 8
Thesis	2 to 8

Acceptable minor fields of study may be selected by the graduate student in one of two categories: (a) Combinations of courses in the areas of pharmacy specialization not undertaken in the major, or (b) Courses in the related areas of business administration, chemistry, bacteriology, zoology, botany or others selected with the consent of the faculty of the College of Pharmacy.

Under this recently developed graduate program only one of the seven students thus far enrolled has completed his work and received the advanced degree.

The future of the University of Arizona College of Pharmacy lies within the intellectual boundaries of its faculties and administrations. A successful future must be one dedicated to the service which it may render to pharmacy and pharmacists everywhere and, thereby, to the privilege of improving the health and life of God's creatures.

The Character of Research at the Doctorate Level in the Physical Sciences*

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The doctoral student, especially in the physical sciences, has been criticized with the statement that he was learning more and more about less and less and was not practical, did not have his feet on the ground and was living in a world that was unreal and unuseful.

This criticism is correct in that it emphasizes the idea, that a doctoral student is a specialist with intensive training in a small field of learning. The remark is also correct in pointing out that scientists, taken individually, *are* sometimes impractical, even queer. I saw one such drive his car onto a Hudson River ferry boat at the evening commuting hour, and his being the first car on, drive it to a position at the prow of the boat. On seeing some fellow scientists among the pedestrian group, he left his car with the ignition locked and went to chat with his friends. When the ferry docked he hurried off with the group to catch a waiting Lackawanna train and thus go to his home in Mountain Lakes. The boat crew were 15 minutes in removing his car from the front of the boat so the other 50 cars could also get off. The result was near pandemonium.

This man was a dreamer, but what beautiful dreams. When his dreams were winnowed by his fellow scientific specialists, and new features were contributed to the dreams by these associates, and the mutually conceived ideas taken to the design engineer (a Specialist) to put on paper with such innovations as he knew to be necessary to make it practical to construct, and blue prints made and taken to the model shop to guide other specialists to construct a working model, there resulted devices of marvelous new potentialities

*Read in a symposium before the Section of Teachers of Graduate Instruction at the 1933 meeting in Salt Lake City.

to make our world a better place for the habitation of an ever expanding human family. I know of no better way in which the first injunction of our Creator to "multiply and replenish the earth and *subdue* it" can be carried out by men than to bring together in a large research laboratory a group of intensively trained specialists with diverse interests and put them to solving a common problem. Each individual of the group may be impractical, in and of himself, but the joint effort of the group is extremely practical and useful, even to the extent that it induces a new way of life among the people who enjoy the fruits of the labor of the group.

There was a day when an Edison flourished; he had great imagination, and a capacity for much work, he originated many productive ideas. But each idea has had to be brought to full fruition by a large group of specialists with diverse interests. The great innovations of today which lead to important technological advancement, all come from organized groups of specialists with complimentary individual interest, and not from a single "well-rounded" individual.

In our doctoral training then, there is justification in the attitude taken by a prominent English mathematician when at a banquet he toasted his specialty thusly—"Here's to pure mathematics, may it never be worth a damn to anyone."

The necessity for specialization comes about because of the tremendous and ever expanding technical knowledge concerning our world. Not so many years ago a man could hope to master, reasonably well, all the real technical knowledge then existing concerning the physical world. But man has only a finite capacity for learning and the body of information now available is beyond him. So, we *must* have specialization. The breadth of knowledge necessary to solve technical problems and devise instrumentation for the benefit and happiness of men comes about through the integration of a large group of specialists into a unified organization.

While it is admitted that the intensive training of a Ph.D. must be along specialized lines, sometimes very specialized indeed, it is also understood to be very important that the candidate should have mastered, to a considerable degree, the

fundamentals of mathematics, mechanics, kinetics, thermodynamics, etc. If this is not done a specialty left to itself soon becomes sterile.

For a long time chemistry advanced relatively slowly in its concepts because the chemists had isolated themselves from their fellow scientists trained in other specialties, and to a significant extent they had not concerned themselves with mathematics, the language of the sciences, nor with the fundamental and universally applicable basic concepts developing in the fields of physics and astronomy. About 40 years ago the pioneer work of the theoretical physicist, J. Willard Gibbs, began to interest a few imaginative chemists, and thermodynamics, up to then for the exclusive use of the physicist and the heat-power engineer, soon became recognized as a part of chemistry. The physical chemist probably now uses thermodynamics to a greater extent than any other science or technology. The work of the spectroscopist has recently been integrated into chemistry and the chemist now begins to understand the binding forces between the atoms, which theretofore were a total enigma to him. Statistical mechanics, a mathematical nightmare to the uninitiated, and invented to explain the physical nature of gases, now tells us how fast a chemical system will react. Thus, a merging of the concepts of chemistry with many of those of physics and mathematics has brought new life, new vigor and a great new productivity into the field of chemistry. Chemistry is no longer a sterile subject. It has life and vitality because of the cross breeding with other specialties.

Biology has long been a science concerned largely with collecting and classifying. With its limited point of view it has long since passed the zenith of its productivity. The inbreeding in this very important field has been of too long duration. In recent years a few biological "maveriks" have arisen and have integrated some mathematics, physics, and chemistry into their studies. Interesting results already are beginning to show up. In a few years we will see a flood of new things coming from this integration of specialties and the field of biology will have been revolutionized. The earth

sciences, geology and mineralogy in particular, are in a state of static restfulness. Here too, the need for an integration with other specialties is evident. When this comes about, and it is now beginning, we will see tremendous strides taken in the understanding and productivity of these sciences.

A second point then, is that to be most useful, a Ph.D. candidate should be trained in the fundamentals of physical science specialties other than his own if he would be most productive in the development of his chosen field. His doctoral researches should often be concerned with using the concepts and tools of other specialties to elucidate problems within his own.

To recapitulate—We are finite in our capabilities so we must specialize, but we serve our specialty best if we integrate with it the methods and concepts of other specialties. This is so, for a great fundamental truth discovered by one specialized group always has profound implications for the understanding of phenomena of special interest to other groups.

The Physical Sciences include; mathematics, physics, chemistry, engineering in most of its subdivisions, and the earth sciences. Research in these can be divided into two large groups—fundamental research, (sometimes called pure research), and applied research. The difference is largely in the objective.

The objectives of fundamental research are:

- A. To discover new knowledge.
- B. To correlate knowledge through great generalizing statements called theories.
- C. To predict, through the implications of theories, phenomena not before observed.
- D. To verify predicted phenomena through observation and measurement.

The objectives of applied research are:

- A. To produce a new material or new thing, usually for human use.
- B. To produce a material or thing in a new way.

- C. To evaluate alternative methods of producing a material or thing.
- D. To improve or enhance the qualities of a material or thing.

Fundamental research is most frequently associated with ideas and concepts. Applied research is almost always associated with the development of products of use in the business of living. Applied research often leads to fundamental research and vice versa. For example, Edison, the applied researcher was seeking a way to make a good electric light. He found that one could draw electric current through the evacuated space separating the heated filament and a third electrode introduced into the evacuated enclosure. The applied researcher, Fleming, used this effect to make a diode rectifier. The applied researcher De Forrest, used the same effect to create the three electrode vacuum tube or electronic valve. But the fundamental researcher, Richardson and many of his Ph.D. candidate students, and many others in all parts of the scientific world labored to solve the how and why of the effect Edison had observed. Whether the individual research was applied or fundamental, the combined effect of all these endeavors has been to give us the electronic age, and make available to us the electronic gadgetry which enriches our lives at every moment. This could not have been done without the ideas and concepts of the fundamental researcher, and the fundamental researcher could not have generated his ideas and concepts but for the work of the applied researcher. The two flourish together. We need both, so we must train scientists to engage in both kinds of research.

Let us examine another example, this time with fundamental research taking the lead. The fundamental researchers, Michelson and Morley, set out to use Michelson's marvelous invention, the optical interferometer, to measure the shift in color of light from the platform of earth moving through the then supposed luminiferous ether. They found no color shift, so there must be something wrong with the concept of a luminiferous ether. Fundamental researcher, Einstein, set about to explain this and came up with his special theory of

relativity which predicts that matter and energy are interconvertible with the quantitative relationship

$$E=MC^2,$$

Where E is energy, M is mass, and C is the velocity of light. This was a strange prediction indeed. But fundamental researcher Rutherford, and many of his students, accepted the relationship and used it in their study of nuclear reactions. Then fundamental researcher Chadwich, found the neutron and fundamental researchers Hahn and Strassmann showed that when one of these hit the nucleus of Uranium 235, a fission resulted with the fragments weighing less than the uranium 235 atom. The difference in weight appeared as energy according to the Einstein $E=MC^2$ relationship. Then many scientists went to work on the problem in an applied way, and the atom bomb, and now the nuclear power plant have been the result. So we see that even the most "pure" of fundamental researches ultimately lead to applied research results. Who developed the Atom Bomb? A whole generation of fundamental and applied researchers, many of whom were applied researchers one day and fundamental researchers the next. One type is not necessarily superior to the other. Both are necessary for the useful advancement of science and thus the well being of mankind.

Accordingly, the research of the Ph.D. in the physical sciences may be either of the applied or fundamental variety, with the distinction being largely in the nature of the immediate objective.

Not all scientific work that is called research, however, is suitable for the doctoral dissertation. Let me illustrate with this story, the authenticity of which I cannot vouch for, but it illustrates my point. An English applied researcher was concerned with the separation of the valuable mineral from the gang in a low grade ore. He had observed that the slimes, that part which floats from a slurry of finely ground ore and water, always carried a greater fraction of the wanted mineral than the part which settled out with the gang. The problem of the research was to find a way to enhance this effect and make all the wanted mineral float, thus effecting a

separation. He was making little headway. One evening, while in these doldrums, he attended a banquet. Characteristic of most banquets, there was a dry after dinner speaker. He sat dreamily fingering a grape which he did not care to eat. This he finally dropped into his half filled glass of champagne. The grape sank to the bottom of the glass, where carbon dioxide bubbles began to collect upon it from the super-saturated solution. Soon the grape had a load of bubbles sufficient to float it. It arose to the top of the liquid where the bubbles were discharged, sank, collected another load of bubbles, rose again, discharged these bubbles and sank once more to start the process all over again. The researcher forgot the after dinner speaker and concentrated on the phenomenon he was witnessing. He took another grape fresh from the plate, dropped it promptly into the champagne in which it immediately sank, but no bubbles collected to cause it to raise. What was the difference? He had fingered the first grape but not the second. So he took a grape and deliberately fingered it. It now acted like the first grape. He had made a great discovery. To get a grape to float you must coat it with an oil which repels water but holds on to gas bubbles. This concept led to the method of flotation for separating mineral constituents in ores. This in turn makes possible the copper industry, which in turn has made possible the transmission of electric power and thus the electric age. The grape experiment at that London banquet was the beginning of a great fundamental research.

There followed a large number of applied researches in university and industrial laboratories wherein all likely oils were applied to oil ores to be separated, and a great body of information was accumulated. Much of this pioneering work constituted good applied research and was worthy of a Ph.D. thesis. Because of the tremendous industrial importance of flotation all likely flotation reagents have now been catalogued as to their effect on all kinds of ores. Still, every time a new commercial ore body is found the separation of the mineral components is tested with a large group of the new standard flotation reagents to determine which is best,

and the best quantities of each reagent to use in the separation. Industrial laboratories frequently call this activity research. If it is research it is not worthy of a Ph.D. thesis, for it is not necessary to use imagination to reach the goal, no unusual powers of observation are required, any technician, operating in a specified way, could grind out the data and arrive at a proper judgment of the relative values of the results.

This illustrates an important criterion for a worthy Ph.D. research in the Physical Sciences. Individual imagination of high quality must be present in a large degree. Research without imagination is almost sterile, it usually leads nowhere. A person devoid of imagination should never be given the doctorate degree. Dr. O. E. Buckley, former president of the Bell Telephone Laboratories and now chairman of a committee of scientists to advise the president of the United States on scientific matters, especially concerning national defense, came into my laboratory once and said—"You should spend about $\frac{1}{3}$ of your research time on new ideas, don't worry at first that these seem wild, if you'll pursue them and watch for the unexpected you'll find many rich rewards in the work." My colleague, Dr. Henry Eyring has often said—"it is the explanation of the unexpected result which brings progress to science." Such an exploration takes a high order of that personal quality called imagination.

Imagination is a very vital part of the research effort on the doctorate level. We must train researchers who let their imaginations go, but who are willing to test each new idea in the fierce refining fire of objective observation and measurement.

In summary: Research at the doctorate level in the physical sciences has the effect of making the student a specialist. This cannot be avoided since the mind is finite and the body of technical information far beyond the capacity of one individual to learn. To be vigorous and productive, the standard ideas and methods of the specialty should be "cross-bred" with fundamental ideas and methods derived from companion sciences and technologies. To achieve this the doctorate

candidate should be encouraged, perhaps required, to sample the fundamental concepts of other companion sciences even though he remain a relative novice in these fields. In the development of his research problem he should be encouraged to engage in imaginative thinking, for it is in imagination that all new ideas have their origin. A Ph.D. candidate is not trained for his profession as a research worker until he has experienced imaginative thinking and has evaluated his imaginings in terms of observed phenomena and scientific logic.

The Character of Research at the Doctoral Level in the History of Pharmacy

GLENN SONNEDECKER

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Justice Oliver Wendell Holmes once remarked that "continuity with the past is not a duty, it is only a necessity." Like Holmes, we readily recognize that the precious present becomes only a "thin, disappearing line between the Past and the Future," a future about which we cannot even speculate intelligently without reference to the past. But in many minds there has been a question: how far should we go—beyond the manuals and journals covering the main segments of our lives—in trying to preserve and interpret what men have thought and done. Is this kind of endeavor serious enough to be dignified by doctoral study and research? And does it deserve support from universities by creating places in which the resulting historians can work?

*Presented in a symposium on "Research at the Doctoral Level" before the Section of Teachers of Graduate Instruction at the 1953 meeting of the A.A.C.P. in Salt Lake City.

In the United States, cultural maturity brought the same answer as it had in other societies. This feeling that history needs to be more than a literary avocation (although there will always be a place for that) spread through the educated community, and now even into this Conference!

History is of course not the only social science whose investigations might profitably focus upon pharmacy. Sociology, psychology, economics and cultural anthropology can all contribute, yet a pharmaceutical literature at the level of advanced research is practically non-existent. The history of pharmacy draws upon all of them for auxiliary material and interpretive tools, but it cannot be co-extensive with these special disciplines.

As the field of pharmacy administration develops we can undoubtedly expect more basic research in pharmaceutical economics. The sociology of the professions has had some development; and the field of American medicine has been provocatively touched by research of the sociologist Oswald Hall. We can see here excitingly new prospects for research on pharmacy from a sociologic or environmental point of view. Some of you can encourage social science departments to use pharmacy for case studies. Those of us in pharmacy with some special training and interest in sociology can perhaps look forward to joint projects with a university department of sociology.

Yet, I do not think we can most profitably discuss today the broad field of social science research in pharmacy—as originally suggested to me—since it remains so largely non-existent. In historical pharmacy, I and other “guinea pigs” offer at least an experimental basis for the subject of the symposium. But it seems fair to say that even here, research at the doctoral level stands in about the same position in America as similar work in general history did three-quarters of a century ago.

Critical historical investigations, associated with instruction at the graduate level, began as late as 1876 at the newly founded Johns Hopkins University. The University of Wisconsin joined a half dozen universities that placed

general historical research on the same doctoral level in succeeding years as other academic disciplines. And you can see an interesting coincidence a couple of generations later when Johns Hopkins in the field of medical history and Wisconsin in pharmaceutical history likewise pioneered doctoral instruction and research in these specialized histories.

Historical pharmacy at this level remains a pioneering field. It started in the Romanic countries, in Spain first, then in France, and more recently in Italy. George Urdang became the first pharmacist in Germany to obtain his doctorate primarily on the basis of advanced study of the social sciences and a historical thesis. I myself, became the first in the United States to do likewise.*

Two other young pharmacists, Alex Berman and Norman Franke, came under the tutelage of Dr. Urdang and are candidates for the Doctor of Philosophy degree in historical pharmacy. Now, for the first time we have a post-doctoral student in our department, Hans Dieckmann, a German pharmacist who obtained the Doctor of Pharmacy degree from the University of Paris on the basis of socio-historical specialization.

Germany has of course been strong in historical scholarship, at least up to recent times. The history of American history reflects an early stimulus in doctoral research from historians who had studied there. In our case, too, the model of aspiration, and inspiration, also came from Germany: first, through the German-inspired American, Edward Kremers, who emphasized historical understanding of the men, ideas and discoveries in the field of a candidate's pharmaceutico-chemical research; then came the American-inspired German, George Urdang, who opened the field, as a full-fledged and full-time historian, in a way that Kremers could not hope to do as a side line.

However much our field—I would even say American pharmacy at large—owes to Dr. Urdang, the continuity of in-

*There have been of course historical doctoral theses by graduate students in the pharmaceutical laboratory sciences, in the United States notably the thesis of Sister Mary Francis Xavier written under the direction of Edward Kremers.

terest and research does not rest solely on one man. Nor does it depend entirely on one university. For the acceptance of pharmaceutico-historical scholarship and of the men dedicated to it, partakes of the general liberation of American history from lop-sided concentration on politics, international intrigue, and Great Men. Since 1900 American historians have focused more and more on other problems, on the economic, intellectual, religious and cultural life of the nation. And, finally, the history of the sciences and professions developed as a special branch; perhaps one should say, as a separate branch, because in general the required combination of social and technical knowledge finds most historians inadequately equipped.

As the pervasive importance of science, technology and the professions in the development of our society became widely recognized—one might even say idolized—this facet of history likewise gained in luster. Historical scholarship in pharmacy gains nourishment from this development, I think, just as it has contributed to it.

While our position in the world of advanced scholarship should no longer have to be vindicated, it seemed well to review the circumstances that place a historian before a group whose thoughts lie mainly in a quite different corner of the research field. Most of you are more interested in knowing about this field of research than in doing such research yourself. You are probably more interested in knowing what kind of student might wisely be guided into it and what will be expected of him, than in knowing the methodologic problems of making him an able investigator. So I should like to answer a few possible questions about pharmaceutico-historical research at the doctoral level without being too esoteric about it.

First, one might ask: What is the caliber, character and ambition of the man who would attempt research at the doctoral level? It goes without saying that his intellectual ability must be of the same caliber, although perhaps not of the same kind, as for the pharmacy student working toward a "Ph.D." in any other field. I use the term "pharmacy stu-

dent'" specifically for Dr. Urdang and I believe that a candidate either should have a bachelor's degree in pharmacy, or substantially its equivalent.

This man will like the *Saturday Review* just as well as *Drug Topics*. He will probably prefer the library to the laboratory. He will have a natural bent toward people and their ideas; and his mind will be open, yet critical, and eager to absorb knowledge of the social sciences and humanities. Our graduate student will be curious and tenacious in not only fact-finding but in sense-finding. And he must demonstrate at least a potential for expressing presumed understandings lucidly and precisely.

Given this bent and capacity, a graduate student is expected to obtain an academic background for doctoral research at least as extensive as that required in your own field—perhaps more extensive if his undergraduate background is entirely technico-professional. At the University of Wisconsin the student ordinarily will take all the courses offered for graduate credit by the professors of the history of pharmacy, of the history of medicine, of the history of chemistry, and of the history of science. He will have a minor in general history satisfactory to the University's department of history. He will perhaps have a second minor in a field such as sociology, philosophy or economics, depending upon his interests and research objective. He must achieve a broader vocabulary, and better reading ability, in foreign languages than a doctoral candidate does in other pharmaceutical fields. The more languages the better, and this may offer not the least challenge of our field so long as it is possible for a man to enter graduate study with perhaps only two years of high school instruction in a foreign language.

While the student is learning the techniques of historical investigation through work on his Master's thesis and in seminars, he will want to select the topic for his doctoral dissertation. We hope the major professor will not make the final selection for him. Nevertheless, the choice must be guided by the availability of research materials, the prospect of satis-

factory findings, and sometimes (dare we mention it?) by available funds.

An American student in Madison, Wisconsin, is not likely to conduct satisfactory research on the "Impact of Western Science on Pharmacy in Russia Since the Seventeenth Century." It is likewise clear that a student should not attempt a thesis on the "History of American Pharmacy." In brief, adequate source material must be accessible enough to make a satisfactory solution to the problem at least possible; and the topic must be narrow enough and fresh enough to guarantee exhaustive, comparative study of the basic and relevant material, resulting in new knowledge and understanding.

The historical theses completed or being completed, within the frame of the doctoral program activated at the University of Wisconsin in 1948, all deal with American pharmacy, a relatively unexplored field at this level of research. These have been studies of American pharmaceutical education before 1900, of the nineteenth century Thomsonian movement and its influence on American medicine and pharmacy, and of pharmacy and drug supplies in the Confederate States.

Such research could equally well enter the field of economic history; for example, price competition and control in American pharmacy historically considered. It could be more specifically science, such as a history of endocrine products or of alkaloids. One could profitably study the process of cultural transmission, assessing, for instance, the influence of American drugs on European materia medica between the 16th and 19th centuries. Socio-historical topics abound, of which an international study of association attempts to control professional conduct would be an example. There is neither time nor reason to catalog other particular fields of investigation, once we have called attention to both the diversity and specificity of topics.

If the student has set his problem, what then? Here we must talk a bit about historical method, since this is fundamental to the character of research at the doctoral level. At least, I feel obliged to allay the notion that a historical thesis involves nothing more than getting together a few old

books and knitting together a hundred pages of excerpts by means of two hundred pages of footnotes! Historical technique is as difficult to describe as to exercise, although one can point to a library of books about it. The standards and the procedures are similar to those in other social sciences. As in the laboratory sciences, the techniques can be learned best by guided experience.

Besides his struggles with seminar papers, however, the graduate student may also have a one-semester course specifically in the philosophy and methods of history.

He will have already learned to see his subject in different lights and with richer ramifications than would, for example, the scientist or the average amateur historian. Whatever his pharmaceutical subject, it will seem practically coextensive with the cultural history of the human race during the period concerned. If the student is to work effectively, it may be necessary not only to encourage thorough work, but also to guard him against becoming mentally and emotionally at sea in his subject. He will know by this time which are the best reference books, and where are the bibliographies on bibliographies. Seeking out whatever has been done previously on the subject he takes the first step toward critically evaluating it and correcting errors in the work to date. A combination of knowledge, "intuition" and guidance will open up new sources, not only in the pharmaceutical literature but in the history of science, medicine and technology, in social history or sociology, in museums, manuscript collections and the like—depending upon his topic.

The student investigator must be made acutely sensitive to the fact that documents, and perhaps even especially "official documents," may be misleading. Documenting a statement does not make it true.

And a large part of the investigator's time will be spent in neither historical search nor synthesis, but rather in determining the validity of his material. He will try to get as close to the events concerned as possible, through eyewitness or contemporary accounts—realizing that these may be more misleading than the account from a later time, al-

though the probabilities are otherwise. It is an obligation to evaluate the credibility of historical material, through what we call "internal criticism," using whatever powers of scholarship can be mustered.

It will be simply obvious to all that one will view a statement by a man like C. S. N. Hallberg in a different light and look for a different bias than if it were by, say, E. F. Kelly. Several pertinent questions will help in judging the testimony of a historical witness: Did he tell the truth? Did he have a conscious or unconscious bias? Was he in a position to observe fully and accurately, or judge correctly? Did this man properly express the thought he intended to convey? And did he record his observations at the time, or in later years? The investigator's ability and ingenuity must derive answers that satisfy his conscience and professional colleagues. If there remains a doubt the probabilities must be stated, which makes for good scholarship if not good reading.

It is quite possible, however, for a shoddy piece of historical research to escape detection—except by an expert in the same field or by someone else repeating the work—just as in laboratory research. That is why bad history, especially if the writing sparkles, seems quite as good to the uninitiated as the product of sound scholarship. That is why, ideally, there should be frequent consultation between the student and major professor if the student is to be protected or prevented from perpetrating slipshod internal criticism or interpretation.

This brings us, in a few long leaps, to the question of synthesis or, more simply, writing up our research. It is too early to begin writing unless the student has considerably more material than he can possibly use in the thesis. As he re-classifies his notes and checks his citations for completeness and precision, weak spots will appear more clearly. By now he will not need to be told that cataloging or chronology is not history, but he will need more or less help in bringing out the historical context and making the transition from fact-finding to sense-finding (as my own teacher, George Urdang, likes to phrase it).

Sometimes the "cold facts" must be warmed up with what the elder Schlesinger calls "powers of insight and common sense." For example, in the study of this Association's nineteenth-century predecessor, which I shall report on briefly later in the week, there was an interpretive need for bridging the gap and explaining the difference between what participants in the Conference of Schools of Pharmacy said and aspired to, and what seems to have been actually accomplished.

Here we enter dangerous territory, where the student may encounter a "booby-trap" behind every apparent cause-and-effect, inferred motivation and hidden intent. Yet, he must be induced to take calculated risks, without risking the transformation of a conjecture into a reality. For what directly derives from the analysis of a document should not be mixed up in the mind of the reader of the thesis with what has been inferred from the data, much less mixed up in the mind of the writer.

If these calculated risks are disturbing to the student, he faces a certainty that is unnerving: that objectivity is impossible in the strict sense, or even in the same sense as in laboratory research. Schlesinger senior faces it frankly, as follows: "Historical facts are subjective in a double sense. In first instance they are entangled in the mental and emotional processes of the actors in the drama; at the next remove they are subject to the mental and emotional chemistry of the investigator's mind. . . The preconceptions of the age, as well as his own human shortcomings, almost certainly refract the historian's vision and affect the results of his researches."

Unfortunately, this affects the character of research at the doctoral level just as surely, although not as much, as it does that of the casual amateur historian. Everybody has his presuppositions, his ideas about what is important. Hence there is a certain warping of history even in the honest and necessary endeavor of selecting material for writing the history of pharmacy from an unmanageable mass of detail in history as it happened.

This selection might create a misleading impression of the causal connections and the social and intellectual nexus that form the flow of history. Quite probably true causation will remain hopelessly complex, for events cannot be repeated—nor repeat themselves—in the sense of keeping factors constant, as one may achieve in laboratory research. Moreover, as future time unfolds new consequences of an event, as it brings new problems to pharmacy and different ideals and experiences, the old events will appear in a different light, new aspects seem important, and a modified interpretation will seem "true." This indicates, in part, why a particular segment of history can rarely be written once and for all,—because the character of research is relative, both to the mental set of the researcher and to the time in which he writes.

According to present historical thinking, the student must become aware of his scheme of values, his "frame of reference," then get on with his work. Perhaps the main point is that the student must not deceive himself or conceal any assumptions from his readers. And so he commits himself to paper, with a humble hope, rather than a naive assurance, that the frontiers of knowledge are advancing! We hope he writes clearly and concretely, pictorially but not figuratively. Perhaps unlike research in your own field, historical research at the doctoral level does not achieve its proper character, we believe, until the results are given literary polish to the extent consistent with standards of accuracy and critical discrimination.

For a very small part of the findings can be adequately transmitted in tables, graphs, or by any stereotyped form of technical reporting. In short, the candidate must try to discover what Sir Norman Angell has called a secret greater than the atom: "How, out of complexity, to distill simplicity; out of knowledge, essential understanding; out of confusion, clarity."

I have tried to indicate, in general and in brief, the nature of the endeavor to create professional historians of

pharmacy. We like to believe that there will be a place for them, that they will be able to search out new understandings of pharmacy, and help impart to the profession something needed, which perhaps the laboratory sciences alone cannot supply.

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The Medical Library Association is offering four scholarships of \$150 each for summer school courses in medical library work in 1954; two at Columbia University and two at Emory University. The course at Columbia is offered from July 6 to August 13, and at Emory from July 19 to August 21. Applications for these scholarships should be made to the school at the time of application for enrollment and that date should be as early as possible in the year since credentials must be approved by the school and application for scholarships must be forwarded to the Medical Library Association for approval. May 1, 1954 is the Association's closing date for scholarship applications and candidates must have already been accepted by the school. Completion of either course will enable a student with a bachelor's degree and one year of library school training to qualify for Grade I certification by the Medical Library Association.

For detailed information about courses, costs, and other information, address The Dean, School of Library Service, Columbia University, New York, 27, N. Y., or The Director, Division of Librarianship, Emory University, Atlanta, Georgia.

*These sources have been particularly useful in preparing this address.

In What Ways Can the American Association of Colleges of Pharmacy Best Serve Its Member Colleges*

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The Executive Committee of the American Association of Colleges of Pharmacy at its Chicago meeting on January 23, 1953, requested the various districts to submit suggestions as to the manner in which the parent organization could best serve the colleges. The program chairman of the committee representing the colleges of District Number 4 suggested that a short introductory paper on the subject be presented at this meeting.

A brief review of what has transpired will serve to better acquaint those in attendance with the problem at hand. Article II of the constitution of the AACP states, "The objective of the Association shall be to promote pharmaceutical education and research." The promotion of pharmaceutical education has been the primary objective of the Association since the time of its inception. Recently, during the years 1949 to 1951 there existed in the AACP a Committee on Functions. This committee spent considerable time and effort in an attempt to clarify the purposes and functions of the Association. The purposes and functions as listed by the committee are as follows:

1. To provide a center of cooperation at the intercollegiate level among schools and colleges of pharmacy for the promotion and improvement of pharmaceutical education and research.

2. To recommend investigative problems among schools and colleges of pharmacy such as: methods of teaching, equivalence of entrance qualifications and degrees, finance, selection of students, curricula and curriculum change, entrance qualifications, student health and welfare, professional competence, academic freedom.

*Presented at the meeting of District No. 4, April 27, 1953.

3. Participate in regional conferences on problems confronting the profession of pharmacy and especially pharmaceutical education.

4. To recommend and advise concerning graduate study in schools and colleges of pharmacy.

5. To promote mutual understanding among schools and colleges of pharmacy.

6. To study academic problems of member institutions and to assist them in the realization of their objectives."

It becomes obvious that the objective of the Association as originally conceived and more recently interpreted by the Committee on Functions is of necessity broad in scope and most certainly is intended to include all phases of pharmaceutical education. Similarly, the purposes and functions listed by the above-mentioned committee demand from the Association a diversified program of action. In spite of their diversity, however, these functions do conform to the constitution and are as valid today as when recommended by the committee. It, therefore, appears that the Association would automatically embark upon the desired program of service to the member colleges if it but found suitable means to carry out the stated functions. To be somewhat more explicit the Association could provide a most noteworthy service to the colleges by investigating the many educational problems that arise in both the undergraduate and graduate areas and then functioning as a consulting agency for the members regarding these problems. Naturally, certain problems will require more detailed study and should be given greater emphasis but information pertaining to all levels of pharmaceutical education should be available.

Although certain initial steps have been taken toward carrying out some of the general functions originally listed by the committee, no further attempt has been made to define them more specifically and progress toward their implementation has been slow.

The following are some studies which have been initiated by the Association and will serve to illustrate the current status. Unfortunately, some of these studies were not pursued to the point where valid conclusions could be drawn. Studies which are not carried to completion cannot yield the

desired information and result only in a waste of time, energy, and funds.

The problems pertaining to teaching methods and curricula have been approached through the Teachers' Seminars in the various branches of pharmacy. This program which continues in operation is a most worthwhile undertaking and is making a notable contribution to pharmaceutical education by keeping faculties informed of both the what and the how to teach at all levels of pharmaceutical education.

Comprehensive examinations have been administered as a means of testing educational background and professional competence of graduating seniors in the various accredited schools and colleges of pharmacy. However, the premature discontinuance of this program precluded the possibility of obtaining concrete information of the value of this type of testing. The problem of comprehensive examinations was again introduced at the 1952 meeting of District Number 4 and a resolution was passed establishing a committee to study the administration and evaluation of these examinations and to make a progress report at this meeting.

The joint NABP-AACP district meetings fulfill the suggestion for regional conferences on problems confronting the profession. It is fortunate that the groundwork for this type of regional conference is already laid since these district meetings can readily be expanded if necessary to meet almost any desired need.

The above are forward steps toward attaining the objective and fulfilling the functions envisioned by the founders of the Association and restated by the Committee on Functions; however, at this time no end-points or clear-cut decisions have been reached and continued study seems necessary on each of the above programs.

In addition to the above, the following are submitted as possible problems for continued study in order that the Association may be in a better position to counsel its members.

Entrance qualifications for matriculation in an accredited school or college of pharmacy are the same as those required by the American Council of Pharmaceutical Educa-

tion. Since these minimum requirements are not adequate to insure more than minimum success in a rigorous professional curriculum, many schools and colleges have investigated methods to be employed for the selection of pharmacy students and methods for determining admission to the professional area. The latter has received considerable attention due to the current trend to separate the curriculum at the pre-pharmacy and professional levels.

Continued effort should be expended in an attempt to formulate valid and uniform procedures for the selection of students who manifest an apparent ability to do high level work in pharmacy. Uniform procedures for the admission of students to the professional curriculum should also be adopted. Here the question may be raised as to whether admission requirements of the same order of stringency ought not be recommended for pharmacy as apply to the other health professions. Likewise, the advisability of accepting students who have been dropped from other schools or colleges of the health professions may merit some attention. Applicable procedures to meet the above perplexing situations and which can be followed with some degree of uniformity by the various schools and colleges could be advocated as a result of investigation by the Association.

While it is well understood that the Association must be cognizant of and support any and all programs which have the advancement of the profession as a whole as the goal, the Association is primarily concerned with problems dealing directly with pharmaceutical education. Also, it must be recognized that many of the problems confronting the profession are more susceptible to solution through educational rather than legislative channels. Thus, the elevation of the standards of pharmaceutical education and practice to the point where pharmacy is more highly regarded by other members of the health professions and the laity is fundamental to the very existence of the profession. This would seem to de-

mand more vigorous action on the part of the Association than passive recognition of the need for an extended curriculum. Great support and intelligent counseling must, therefore, be extended by the Association to those schools who have taken and who are considering steps in this direction.

Currently, many schools and colleges of pharmacy are initiating or contemplating expanded teaching and research programs in the graduate area. No school should accept the responsibility of graduate instruction without the full realization of the tremendous strain that such a program places on the facilities, budget and faculty. It would, therefore, be a great service to these institutions if answers to questions regarding the equipment, physical facilities, personnel and budget requirements for programs leading to advanced degrees were available from the Association office. Erudite counseling regarding the general philosophy of graduate instruction would, of course, also emphasize that graduate study should be more fundamental in nature than a mere extension of undergraduate work.

Naturally, continued study will elucidate many more areas in which the Association can aid its members than have been included in this introductory paper, but it is to be emphasized that investigation and dissemination of information pertaining to the problems of pharmaceutical education by the Association would constitute a major contribution to the schools and colleges and the pharmacy profession.

Lastly, while it is the intent of this paper only to call attention to a few of the areas in which the AACP can help the member schools and colleges it seems necessary to point out again, as has been done in the past, that it does not seem possible to attain the desired objectives until such time as the Association can provide the necessary physical facilities, funds, and full-time personnel required for the implementation of the stated functions.

Teaching Professional Ethics*

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Josh Billings said "It is better not to know so much than to know so many things that ain't so." I am tempted to state that this quotation clearly indicates a major problem of professional indoctrination and let the floor discussion begin from there. Of course, that would be an oversimplification, and certainly would be of little help to you.

This group should need no pressure, nor should it require more "authoritative statements" to understand that we are at long last beginning to face up to a teaching chore we have neglected. We have had many direct statements and many indirect implications, both from within and without our profession, that Pharmacy must improve its general ethical level. We have referred to our Code of Ethics on occasion, but we have done little toward improving its observance. In fact, it is doubtful that very many pharmacists have had even a rudimentary knowledge of their professional code.

This paper has two purposes, (1) to assert that the colleges of pharmacy are partly responsible for the low state of ethical observance in Pharmacy, and (2) to discuss some methods of indoctrinating the future pharmacists.

To accomplish this last purpose, it is proposed to review briefly some of the material used by the author in the ethics unit of his own History and Ethics course, with brief comment thereon. An outline of this material has appeared recently in the *American Journal of Pharmaceutical Education*.¹

The American codes and the order in which they are studied are:

1. American Medical Association Code of 1847
2. American Medical Association Code of 1903
3. American Medical Association Principles of Medical Ethics
4. American Dental Association Code
5. American Institute of Chemists Code

*A contribution of the Problems and Plans Committee Read at the 1953, Salt Lake City meeting.

6. American Pharmaceutical Association Code of 1852
7. American Pharmaceutical Association Code of 1952

The class reviews of these codes represent only a partial coverage of their contents, except for the current American Pharmaceutical Association Code, which is discussed at length. The reviews of the other American Codes serve the following purposes:

1. Comparison and contrast with Percival's work.
2. Illustration of basic conflict between hedonism and ethical ideals.
3. Illustration of basic identity of principles and re-emphasis of certain points.

At this point, the student has heard about quite a number of codes, and several have been discussed in some detail. Perhaps just as important, however, is that a considerable number of illustrative cases, both real and hypothetical, have been mentioned to illustrate various points in the Codes. Furthermore, the students have been encouraged repeatedly to ask questions or to argue for, or against, any statements made. They are assured that complete unanimity of opinion is not expected.

We introduce the ethics unit into our course after some coverage of the history of early civilization; specifically, it follows the contributions of the early Greeks.

While the exact content and methods used vary somewhat with each class, we begin by reviewing first the basic terminology needed, then the four most famous ethical systems of history. At this point, we can easily refer to and compare the low state of ethical thought shown by the earlier "Fee Codes."

The Hippocratic Law or Standard is mentioned as a preliminary to the study of the Oath. The latter is then read and explained in detail, with emphasis on the probable inspiration of and need for it.

Most of the medieval writers can be dismissed as hedonists. This is also convenient as a timesaver in such a course as ours. We give some attention to the Oaths of the Faculty of Medicine of Montpellier, The Oath of the Paris Apothecaries, and the so-called Oath of Maimonides. These are read, but not commented upon to any great extent.

As a basis for understanding the origin and content of Percival's "Medical Ethics," we discuss his background and friends. We outline the content in the process of these remarks, then review the chapter on the Apothecary in detail.

The subject of Percival's work is concluded with a discussion of its short-comings from an ethical standpoint. The ever-present conflict between hedonism and idealism, and the danger of permitting professional ethics to degenerate into mere professional etiquette are pointed out and illustrated.

The climax of this entire unit of the course comes in the next two periods. For these meetings, the class is divided into smaller groups. This gives more chance for each student to participate in the discussions.

Each student is notified that he must be prepared to discuss a problem of professional ethics. He may take his choice. The classroom procedure at these meetings, is to choose a volunteer to start the ball rolling. He usually puts his problem in the form of a question, but a statement can be handled just as readily. If the problem is given in question form, he must give his own answer first; if given as a statement, some other member of the class is selected to make the first comment. After two or more students have made their comments, the instructor begins to take part.

The problems brought in by the classes cover a very wide range. For example, in one class period this summer we discussed the following; advertising copy, euthanasia, unions in pharmacy, administration of emergency treatment by pharmacists, socialized medicine, and reporting of misconduct on the part of other pharmacists. It will be noted that we do not limit the problems to pharmacy, *per se*. We feel that any question of professional ethics can be used for illustration and indoctrination. We think that most students are not resistant to this type of work, but that their backgrounds often have not included enough emphasis on the simple ethical principles. We believe the colleges must fill this gap by including such work, and taking a vigorous and aggressive stand on these problems.

As the concluding part of this unit, we have been reviewing an article by Kohn, "Liberation from Selfishness," a nice designation for the summary and conclusion of our work. Kohn argues that the professions generally go through stages in their development to full flower. He recognizes five steps, which are essentially as follows:

1. Desire to protect the profession from unfair competition, and to improve it in public esteem.
2. The members of the profession begin to consider the importance of their relations to each other.
3. The profession makes an effort to prevent outside interference, legally or otherwise.
4. There is an effort to improve the standards of admission to the profession.
5. The stage in which public needs are placed paramount to professional rights or even desires.

Herein one can find everything written or implied in the many codes. Here, too, are presented opportunities for almost unlimited illustrative comment on the professional status of Pharmacy, past and present.

Thus far, we have concerned ourselves principally with *content* and *order* of presentation. We should like now to mention some of the related methods and materials we have found effective.

First of all, we require the completion of a library assignment on professional ethics. This chore is given out the day we start the work. The students are required to choose different topics. They may write a review of several articles or chapters of a book, or they may review some of the principle tenets of a noted philosopher and discuss their applications to professional ethics. We feel that allowing the students a choice of subjects tends to make them *read more* and *think more*.

Throughout this unit, and at various times in the later historical work, we engage frequently in "sloganeering." This has two purposes as we see it; first, it is a deliberate effort to avoid the cliché which "goes in one ear and out the other," and secondly, a good and new slogan is a "catch phrase" which has a good chance of embedding itself in the hearer's con-

sciousness. Many of these slogans are the best-remembered parts of the ethics unit.

We are building continually a file of clippings. Most of them are of recent date. They are shown and referred to in class, and sometimes they are placed on the bulletin board for the students to read before and after the class. The clippings file is considered a device to heighten interest.

Related to the clippings file and used for the same reason are the "Actual Case" problems. Students in this and other classes bring information on specific events or prescription problems of which they have first-hand knowledge. These are presented, except on the two "discussion days" referred to, by the instructor.

We at Butler feel strongly that the teaching of ethics is a *four year task*. There are abundant opportunities in all of the professional courses for the instructors to make reference to matters of professional ethics. This is especially true in dispensing and jurisprudence, but other teachers are urged to make a conscientious effort to refer to such items occasionally.

Related to this plan is the frequent mention of the probable state of professional ethics in Pharmacy as shown by the way it has developed in various countries. (This seems to have the additional merit of making the history more "palatable" to the students.)

The most important point to observe in teaching this unit on professional ethics is the great value of good discussion leadership. The instructor must be able to direct the trend, and he must know when to terminate discussion on a particular point. We insist that the teacher must be careful not to let his own, or a student's religious background become the *sole* basis of any comments made in the class, although we do not forget that good religion and good ethics have much in common.

To return to Josh Billings: We must disabuse the student's mind of "- - - many things that ain't so." We must plant new thoughts in his mind, using frequent repetition of ideas, but with varied illustrations. Finally, we must do our utmost

to be sure the newly instilled seeds of thought are nurtured to maturity in later years.

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Character of Research at the Doctorate Level in the Biological Sciences*

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Biological research, as reflected by advances in the pharmaceutical and the medical sciences, has extracted more significant knowledge from the universe of the unknown during the past ten years than during any similar period in history. The number of scientific personnel and the interest in research are now at an all time high and "there is no reason whatsoever to think that the years ahead will see a decrease in the emphasis placed on research; all evidence points in the opposite direction."¹ Indeed, the number of research laboratories has increased from 3 in 1905 to 2350 in 1940 with a total personnel as of the latter date of 70,000.² It has been estimated that there are now 5,000-6,000 research laboratories staffed by 200,000-250,000 scientifically trained persons.³ These figures represent only about 3 per cent of the firms whose activities are wholly or partly based on the sciences.

In view of the increased demands for scientific personnel, it is only reasonable to assume that the years immediately ahead will find increasing numbers of students seeking ad-

*Read in a symposium before the Section of Teachers of Graduate Instruction at the 1953 meeting in Salt Lake City.

mission to our graduate schools. Thus the possibility of increased graduate enrollments, the fact that many colleges of pharmacy are expanding their graduate programs, and the multiplicity of technics and precision instruments now available for research provide ample reasons for re-evaluating the character of research which should be done at the doctorate level in the biological sciences.

In order to avoid confusion it seems prudent at this point to clarify what is meant by the term "biological sciences" and to review the purpose of graduate training in this area. Because of my interest in pharmaceutical education the term biological science will be restricted to mean training at the doctorate level in pharmacognosy and pharmacology. This limitation seems justified since these two disciplines are the only ones in the biological science area which are offered at the graduate level in colleges of pharmacy. The primary purpose of graduate training in the biological sciences is to train individuals for a life-time career in research. Such a career may be found as a faculty member of a college of pharmacy, as a scientific worker in some governmental agency, or as a research worker in a pharmaceutical or industrial laboratory. Irrespective of the position finally accepted by the young Ph.D., a well-balanced research program should form an integral part of his activities. Naturally some educators will not agree that research is essential for a successful teaching career in the biological sciences. Such individuals should remember that if this were not the intent of graduate education as currently organized, courses in educational methods and practice teaching should supplant the research requirements for the doctor of philosophy degree.

Before directing attention to the character of research offered in the biological sciences, it seems appropriate to call attention to the obligations of colleges of pharmacy which offer advanced work in this area. "The faculty of a college of pharmacy offering graduate instruction in the biological sciences must be 'strong' in the sense that its members are recognized for their research contributions in their respective fields. Such recognition can only be gained if the faculty

members themselves do fundamental research and present the results of their research to scientific and professional societies."⁴ The faculty members directly responsible for graduate instruction in the biological sciences then must be actively engaged in research and must have full confidence of their colleagues.

An active faculty research program is prerequisite to a successful graduate program. The importance of such a program to the incoming graduate student has been adequately reviewed by Abreu:⁵

"Research should be built around a functioning research program in progress by members of the faculty. It will be difficult for a student to know in what phase of a particular problem he might become interested. However, instead of stifling his desire to contribute by burying him in the library, it would be better to introduce him to the research program of the institution by starting him in a small phase of a particular project which does not require great technical skill. If he is an individual who is interested in research, he will not be satisfied by a limited knowledge of this small phase of a research project and will naturally expand his perspective by initiating his own literary research. This he should be encouraged to do early in his research career."

Such an introduction to graduate work will not only serve to orient the student into the methods of research but will instill in him the obligation which he has assumed; namely, that the lifetime occupation of all candidates for the doctor of philosophy degree in this field involves research. Furthermore, the effect of an active faculty research program on the undergraduate student should not be overlooked; "undergraduate students must be inspired to reach the graduate level."⁶

Since we have reviewed the purpose of graduate training in the biological sciences and the responsibilities of institutions offering such training, we can now turn our attention to the character of research which should be done at the graduate level. In view of the fact that the term character means quality or type, it is tempting to describe research as basic, academic, fundamental, pure, applied, practical, or worthwhile. However, it should be remembered that research classified as basic, academic, fundamental or pure at the time it is done may, as future developments occur, become applied or

practical research. Likewise, "the term worthwhile research should be used very cautiously. Because the results of some research projects do not have immediate and direct application does not imply that the research is worthless. All the results of research, if carefully conducted and accurately recorded, whether the results are positive or negative, are worthwhile."⁷ Nevertheless, it is possible to visualize research problems in the biological science area which contribute little to either pharmacy or medicine. In the writer's opinion, the very nature of pharmacognosy and pharmacology requires that research workers in these disciplines direct their attention to problems which have a potential influence on the health and welfare of mankind.

I am reminded of an old fable which tells of the grain field, ripe and ready for harvest. First come the harvesters who cut broad swaths of the golden grain. Then come the gleaners who pick up a scanty but marketable harvest that the reapers didn't bother with. Then come the herds of sheep who still find enough for their modest wants; and, when they have finished, there come the geese who make a great fuss over every grain they find in a crevice. The field of science is somewhat like this field of grain; however, we cannot all be harvesters and open up new fields of investigation. By persistent, systematic study of the literature and of new developments, we can be gleaners and contribute significantly to the harvest. Although the field of science, unlike the field of grain, is never exhausted no matter how much it has been combed, we must be alert to new developments lest we be left behind while searching for that last bit of grain. Those concerned with directing research in the dynamic biological science area should not hesitate to explore new fields of investigation or enter those which have recently been revealed. Indeed, it is unfair to place a graduate student in with the geese to search for the last kernel of grain. Even though his search is successful and he completes his work to the satisfaction of his committee, he is left bewildered, insofar as further research is concerned, because of the limited horizon

opened up by his research; as a result, another "stillborn" Ph.D. comes into being.

What are the tools with which the graduate student should be equipped in order to assure his continued productivity in research? Among the factors essential for success in this field are accurate observation, technic, factual knowledge, critical reasoning, creative thinking, good judgment and common sense. According to Sollman, "some of these elements are inborn; some can be learned; some must be learned. Some aspirants learn them easily; some never can learn them; and some—alas or happily—never learn that they cannot learn them."⁸

Perhaps the most important quality that a graduate student in the biological sciences must cultivate is *observation*—accurate, intelligent, comprehensive, and discriminating observation. True observation requires not only objective accuracy but also selective discrimination. The observer should focus attention on the phenomena at hand; nevertheless, he should be alert to note other significant changes which may occur. The accuracy of observation should be adequate for the purposes at hand; but accuracy should not be confused with delicacy and sensitivity. For example, an instrument may be very sensitive and yet if it is not properly calibrated it will not be accurate. Likewise, an observer may be very sensitive to changes which occur but if not trained to make accurate records of his observations, the results will not be correct. How can a person be trained to be an accurate observer? It comes from practice and good habits built upon a firm foundation. Therefore, the entering graduate should be started on some phase of research, no matter how small it might be, early in his graduate career. His major professor should take the time to impress upon him the necessity of being exact in what he observes, records, and does. He should be trained from the start to keep neat, accurate, complete records which can be properly interpreted by others without a first-hand knowledge of the experiment. In the writer's opinion, the student who has learned to keep a complete, accurate protocol of his work and to summarize his findings at peri-

odic intervals has laid a firm foundation upon which other prerequisites for a successful research career can be built.

Technic is a second quality which should be developed in the student by means of research. It includes mechanical technic and biological technic. The former includes apparatus, its management and an understanding of its scope and limitations. The latter includes manual dexterity and the mastery of the various manipulations and procedures which are common to the biological sciences. "The pharmaceutical applications of newer instruments and techniques are tremendous and offer a challenge to the energetic, resourceful research worker."⁹ How can these newer instruments and techniques be learned? Courses in instrumentation may serve to acquaint the graduate student with various items of equipment but will not develop the manual dexterity which is so necessary for various techniques. Perhaps the best way to broaden the student's technical training is through a systematic rotating research program. For example, in the departments of pharmacology of our institution (College of Pharmacy and College of Medicine) several large research programs are being energetically pursued. These include, convulsive disorders, radioisotopes, cardiac and autonomic drugs, hormonal regulation of water balance, localization of the site of action of emetic drugs, and others. All graduate students in pharmacology in both colleges have the privilege of becoming acquainted with these projects through research seminars and individual conferences with the responsible investigators. In addition, graduate students in pharmacology in the College of Pharmacy have the privilege of working a short time on some phase of three or four of these projects. In return, superior medical students and graduate students in the department of pharmacology of the College of Medicine are rotated through research projects in progress in the College of Pharmacy. Therefore, both groups not only become familiar with the apparatus and learn the techniques concerned but, what is more important, develop a broader understanding of pharmacology through their contact with an authority in a particular field. The value of this varied research experience, in terms

of training, technic, and scientific publications, cannot be over-estimated.

A third factor which is essential for the student's continued interest in research is *factual knowledge*. It has been truly said that "we see so much farther than our fathers because we stand on the shoulders of giants."⁸ However, the graduate student cannot achieve this position unless his course work, research and major professor stimulate him to "climb up" and assume this commanding position. Factual learning must be both general and specific. The general background is acquired through course work and a careful perusal of current textbooks; whereas the specific knowledge is gained through a well-organized systematic review of the current literature, including abstract journals and reviews. The necessity for a systematic and continued study of the scientific literature should be impressed on the graduate student early in his career. Such study will train the student to plan and execute independent research, to evaluate the research of others, and will contribute to his ability to communicate the results of his research in an understandable manner. In addition, the character of the research problem assigned or selected by the student can contribute in a material way to his factual knowledge. For example, research problems which involve stereotyped procedures and are interpreted on an all-or-none basis contribute very little in terms of factual knowledge. On the other hand, those problems which are designed to elucidate basic biological principles or which attempt to explain mechanisms, biological fate, or site of action, etc. transmit much basic knowledge to the student. In general, research problems which embrace numerous techniques and involve a number of biological vicissitudes make the most substantial contributions to factual knowledge.

Although carefully selected research problems can contribute to the development of the remaining four factors which were previously enumerated (critical reasoning, creative thinking, good judgment, and common sense) there is no short cut to their acquisition. In general these qualities are developed with study and research experience. However, the

character of research done at the graduate level must be dynamic and challenging; it must demand that the student be familiar with basic biological systems and processes; it must disclose new fields and lines of investigation in order to develop these qualities. This statement should not be construed to mean that biological research should be highly technical and esoteric. On the contrary, it may involve only basic techniques and be relatively simple. Nevertheless, it should fulfill the usual processes of research, as described by Claude Bernard in his *Medicine Experimentale*, and go in spiral cycles: The cycle begins (a) with the observation of a fact, directly or by reading; (b) an idea takes form as to the relation or meaning of the fact; (c) an experiment or observation is planned to test the idea; (d) this leads to the observation of new facts; (e) new ideas take form; and a second cycle of observation, reflection and verification is initiated. The value of this type of research project to the graduate student is obvious.

In summary, it may be stated that biological research at the graduate level should be of such character that it will develop accurate observation, technic and factual knowledge. It should stimulate and encourage critical reasoning, creative thinking, good judgment, and common sense. It should leave the investigator with an idea and a hypothesis which serve as an activator to the next cycle of research. Indeed, biological research which does not raise more questions than it answers, is hardly worthy of graduate level standing.

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Report on the American Foundation for Pharmaceutical Education

The American Foundation for Pharmaceutical Education celebrated its tenth anniversary in 1952, and in my report to you last year I pointed out the special significance of this fact. I shall now report on the progress of the Foundation during the first year of the second decade of its service.

At the annual meeting in April, through amendments of the By-laws, two changes in the organization of the Foundation were made. The first of these increased the upper limit in the number of members of the Board of Directors from thirty to thirty-five. A year ago when the number was increased from twenty-five to thirty I indicated that this was important because it made it possible to bring into the management of the Foundation an additional number of highly desirable and interested men from the pharmaceutical industry. It is a sign of progress that it seemed best to raise this limit again because of the increased number of leaders in the industry who are showing a real interest in the work of the Foundation. The list of the names of the industry's representatives on the directorate of the Foundation is certainly impressive and inspiring.

A second amendment of the By-laws made it possible to honor a man who had just retired from the Board of Directors after outstanding and continuous service as an officer and director of the Foundation since its incorporation. This amendment created the office of honorary president, and Mr. George V. Doerr was elected as the first honorary president of the Foundation. It is an appropriate recognition of the great contributions that Mr. Doerr has made to the Foundation's progress.

All of the continuing activities of the Foundation have been maintained during the past year. These include financial support of the following:

- American Council on Pharmaceutical Education
- American Journal of Pharmaceutical Education
- Graduate Fellowships

Teaching Fellowships in Business Administration
Undergraduate Scholarships
Teachers' Seminars
E. L. Newcomb Memorial Awards

For the 1952-1953 academic year the Board of Grants awarded 21 new fellowships, 5 teaching fellowships, and renewed 45 fellowships, at a cost of a little over \$100,000. As of this August some 200 Fellows have received their graduate degrees under grants from the Foundation.

The Board of Grants allocated \$16,525.50 for undergraduate scholarships during the 1952-1953 academic year. These were distributed among 42 colleges of pharmacy, the largest number ever to receive Foundation scholarships. The maximum award is \$400, which must be matched by new funds appropriated for undergraduate scholarships by the recipient college. In the past there have been times when some have questioned the advisability of continuing these undergraduate scholarships. Now, however, it seems evident that by this method of aiding undergraduate students, the largest number of students are helped at the lowest cost to the Foundation. There is reason to believe that the need for scholarships will increase rather than diminish during the next few years.

A relatively new service of the Foundation is the administration of the Edwin L. Newcomb Memorial Fund which annually provides special cash awards of \$250 each to authors of "meritorious papers and essays in the field of pharmacognosy." The first two of these awards are being made during this convention. This fund was provided by the Special Committee to Honor Dr. Edwin L. Newcomb. It is with sadness that we record the death of one of the most active members of this committee, Mr. S. B. Penick, Sr. It was largely through his interest and effort that the Foundation undertook the administration of this fund.

The amount of the financial support that the Foundation receives is one of the important indicators of its progress. The 1953 solicitation yielded approximately ten per cent more than that of 1952. This is somewhat encouraging, but it was not sufficient to meet the current budget. The budget for

the coming year is about \$200,000., and the 1954 solicitation must yield substantially greater returns if the income of the Foundation is to offset its expenditures. An income of \$225,000 is needed annually to maintain what are considered to be the essential activities of the Foundation in behalf of pharmaceutical education. The cause is such a worthy one that we trust the needed contributions in greater size and number will be forthcoming.

On June 16, the office of the Foundation was moved from 1450 Broadway, New York, to 1507 M Street, N. W., Washington, D. C. Although the move brought about a slight reduction in general operating expense, this was not the reason for it. The move was made at the suggestion of Secretary W. Paul Briggs who explained that in his considered judgment the Foundation could function just as well in Washington as in New York, and that he could carry on his work much more conveniently in Washington. His suggestion was adopted. It was agreed by the Directors that Secretary Briggs should be provided with optimum conditions for his work which will demand all his ability and skill during the coming years if the Foundation is to progress as it should. If the New York location was a handicap for him, then it seemed best to remove the handicap. We believe his achievement during the coming years will prove the wisdom of this decision.

Dr. Robert L. Swain is now president of the Foundation. That he was willing to undertake the duties of this office in spite of his many other activities is evidence not only of his great interest in pharmaceutical education but also of his conviction that the Foundation is a very important factor in promoting the welfare of all phases of the practice of pharmacy. Our Association is indebted to him for his work in the past in behalf of pharmaceutical education, and we now owe him a special debt of gratitude for his willingness to make this additional contribution of time and effort to a project that is linked so closely with the welfare of our Association. With the enthusiastic cooperation of Vice-President James J. Kerrigan, Treasurer Howard B. Fonda, and Secretary W. Paul Briggs, we can be reasonably sure that Dr. Swain's administration will be a notable one in the history of the Foundation.

In concluding this report I would emphasize, as I have on previous occasions, that our Association has a preferred position in the organization of the Foundation and a great stake in its future. Let each of us, therefore, become thoroughly acquainted with its objectives and do everything possible to assist in attaining them during the coming year. In my opinion the American Foundation for Pharmaceutical Education is one of the most important organizations in pharmacy and is wholly worthy of every effort that we may make to aid its progress.

HOWARD C. NEWTON
*Member of Board of Directors and
of the Executive Committee*

Report of the Committee on Committees

The Committee understood from the terms of its appointment that it had the following tasks to undertake: (1) to review the functions of each of the standing and special committees of the Association; (2) to determine if the stated purposes are being achieved; (3) to exercise some judgment as to whether the scope of the committee functions was sufficiently broad, too broad or too restricted; (4) to restate the functions of each committee in the light of the committee opinion; (5) to make recommendations for the continuance or discontinuance of existing committees or the establishment of new ones, if that is deemed necessary; (6) to submit a report to the Association embodying our findings and conclusions with a suitable recommendation for its disposal.

In pursuance of its task, the Committee investigated the origin of each committee; consulted by correspondence with the present chairmen and discussed the results of this consultation at a meeting of the members with President Daniels.

The Committee on Committees submits the following report of its study.

The committees of this Association originate out of a need for certain kinds of services to the Association or the profession. These services may be organizational, policy making, long range planning, studies on problems of continuing interest, studies on short term problems. Committees to accomplish these various tasks may be classified in three general categories: (1) Standing Committees; (2) Continuing Committees; (3) Special Committees.

Standing Committees may be defined as those committees concerned with (a) the organizational structure of the Association and (b) with those studies which are fundamental to the purposes of the Association and which require continual scrutiny to the end that the Association keep informed of the growing edge of knowledge and techniques in the profession as well as in education.

It is recommended that Standing Committees under this definition, have a rotating membership which would afford some continuity of thought, prevent the dissipation of effort through the repetition of the work of a preceding committee and provide for the continuing influx of fresh ideas and different persons. It is suggested that the term of service for any member of these committees should not exceed three years and it may be shorter (e.g. the two year term of elected members of the Executive Committee). As a general rule, persons elected or appointed for a stated term of more than one year shall not be eligible to succeed themselves.

A person elected or appointed for a one year term may succeed himself at the pleasure of the Association or the appointing officer.

It is recommended that the following existing committees be classified as standing committees of the Association.

1. The Executive Committee
2. The Auditing Committee
3. The Nominating Committee
4. Committee on Resolutions
5. The Committee on Constitution and By-Laws
6. The Committee on Educational and Membership Standards
7. The Committee on Curriculum
8. The Joint Committee on Pharmacy College Libraries
9. The Committee on Relationships of Boards and Colleges
10. The Council on Conference of Teachers

Continuing Committees may be defined as committees organized to study problems which may require more than one year for productive results. Other committees, which are a part of a larger committee appointed for the study of problems jointly with other associations may be classified as continuing committees. The life of a continuing committee is subject to termination when its study mission has been accomplished; this may be determined by action of the Association upon recommendation of the committee or by action of the Executive Committee.

It is recommended that the membership of these continuing committees be appointed annually in order that changes in or additions to the committee membership may be made in the best interests of the project and the Association.

It is recommended that the following existing committees of the Association be classified as continuing committees.

11. The Committee on Problems and Plans
12. The Committee on Status of Pharmacists in the Government Service
13. The Committee on Predictive and Achievement Tests
14. The Committee on Audio-Visual Education
15. The Committee on Civil Defense Education
16. The Committee on Activities for Alumni
17. The Committee on Pharmaceutical Research
18. The Committee on Graduate Study
19. The Committee on Personnel Problems
20. The Committee on Emergency Problems

Special committees of the Association may be appointed pursuant to resolutions approved by the members or upon the designation of the President. Unless specifically reactivated upon recommendation to and approval by the Association, a special committee shall function only from the date of its appointment until its report has been made to the Association at the next annual convention. In the event that a special committee is reactivated for another period, the services of its chairman and members are at the pleasure of the Association or the appointing officer.

It is recommended that the following existing committee of the Association be classified as a special committee:

21. The Committee on Committees

In addition to committees, the Association maintains membership in a number of other bodies and is represented in the meetings

of these organizations by official representatives. At present, the Association maintains membership in and sends official delegates or representatives to the following organizations:

1. American Council on Education
6 delegates
2. American Council on Pharmaceutical Education
3 delegates
3. American Foundation for Pharmaceutical Education
5 delegates
4. American Pharmaceutical Association
1 delegate
5. American Association for the Advancement of Science
1 delegate
6. The National Drug Trade Conference
3 representatives
7. National Wholesale Druggists Association
1 representative

The term of service of each of these delegates or representatives is either specified by our present By-Laws or is suggested by the Association to whom the delegation is accredited. Where this is not the case, the term is for one year or until a successor is appointed by the Association or its executive officers. The right of succession is at the pleasure of the appointing body or officer.

The Executive Committee. Provision was made for the creation of this committee in the first By-Laws of the American Conference of Pharmaceutical Faculties (1900-1901). It then consisted of four members, two to be elected each year for two-year terms and a fifth elected as chairman for a one-year term. In effect, this provision has continued but with the addition of the President, the President-Elect the immediate Past President, the Secretary and the Editor of the *American Journal of Pharmaceutical Education* as members.

From the inception of the committee, a number of its important functions have been defined in the By-Laws. These duties may be classified in the categories having to do with (a) finances; (b) arrangements for the annual meeting of the Association; (c) supervision of member colleges and applicants for membership with respect to their compliance with the requirements for membership in the Association; (d) the collection of enrollment and graduation data and the circulation of this to member colleges.

In addition to the above specified functions, the Executive Committee has been because of its continuing and responsible nature,

the committee of first referral for new studies and projects desired by the Association. In a number of instances, it has referred these to special committees or sub-committees of its own, whichever procedure seemed to offer the most efficient solution. On occasion, the Executive Committee has initiated studies and projects which resulted from creative thinking and long range planning within the committee. Upon request, it has served as an advisory committee to the President in making his committee appointments.

It is the opinion of the Committee on Committees that the Executive Committee might increase its service to the Association by increasing its emphasis on long range planning. The reports of the many committees of the Association contain suggestions which may well furnish the impetus for these long range studies. In the normal course of events many of these suggestions are endorsed by the Committee on Resolutions and the Association but fail of continued study because of the discharge of the originating committee or the appointment of new personnel. It should be the duty of the Executive Committee at its meetings to discuss these reports, even though they may not contain a specific recommendation, and winnow from them, the seeds of continuing progress for the Association. As a continuing committee whose members are dedicated not to a special project, but to the achievement of the general purposes of the Association, the Executive Committee should be the proper one to look to for practicable and creative projects.

The Auditing Committee. The President of the Association has customarily appointed an Auditing Committee from among the delegates present at the annual meeting. The duties of this committee have been those implied in the title. It can be demonstrated from the length of the annual report of the Secretary-Treasurer that the task of the Auditing Committee can be time consuming and is likely to be increasingly so in the future. The Auditing Committee appointed in the foregoing manner is prevented from participating in much of the program of the annual meeting.

It is recommended that the Auditing Committee, a standing committee of the Association, consist of a Chairman and three other persons, delegates from member colleges, appointed by the President with the advice and consent of the Executive Committee not later than one month before the end of the fiscal year. Initially, two of

these members shall be appointed for terms of one year each, and two for terms of two years each. Thereafter, two persons shall be appointed each year for terms of two years each.

The duties of the Auditing Committee shall be to receive from the Secretary-Treasurer, all financial records of the Association and its Committees as soon after the close of the fiscal year as may be possible, but in any case sufficiently in advance of the annual meeting to afford opportunity for the committee to function and make its report. The Auditing Committee shall inspect these records and reconcile the recorded transactions with the corresponding vouchers, checks, receipts, bills or other evidences of receipts and disbursements and report their findings to the Association. They shall determine if, in their judgment, the financial affairs of the Association are being properly carried out and shall make a report to the Association with any recommendations for changes in the manner or method of handling these affairs.

The Nominating Committee. The Nominating Committee is an important organizational committee of the Association. In that sense, it belongs in the category of standing committees. The number of officers to be nominated by this committee each year is small and the group from whom candidates are to be selected is relatively a small one. There seems to be no problem of a continuing nature which would require the Nominating Committee to have a rotating membership. It is recommended that:

The Nominating Committee shall be composed of a Chairman and four other members, delegates at the annual meeting of the Association appointed by the President at the first session of the annual meeting. The duty of the Nominating Committee shall be to nominate delegates for the offices of President-Elect, Vice-President, Secretary-Treasurer, Chairman of the Executive Committee, and two members of the Executive Committee. The Committee shall make its report at a later session of the annual meeting at the time specified on the program and upon disposition of its report by the Association, shall be discharged from further duties.

The Committee on Resolutions. This committee is presently authorized in the By-Laws, Article X. There are some benefits to be anticipated from a continuing membership rather than a complete change of membership each year, as is possible under the By-Law.

Committee on Committees recommends no change in the term of office of members of the Committee on Resolutions, but suggests that the President in advance of the annual meeting, be permitted to name the members of this committee so that resolutions which require lengthy study or discussion may receive adequate treatment.

The duty of the Committee on Resolutions is to receive all resolutions presented in writing to the Association or its officers by delegates from member colleges; to study these resolutions in the light of their probable effect upon Association policy or procedure and to make recommendations with respect to the disposition of the resolutions. The Committee on Resolutions may modify the language of a resolution only after consultation with the author. The Committee on Resolutions may on its own initiative, submit resolutions to the Association with respect to matters of policy or procedure; resolutions thus presented must be clearly identified as to origin and supported by sufficient explanatory material to aid in the understanding of the intent and effect of the resolution. As an aid to its deliberations, the Committee on Resolutions may call upon any officer or delegate of the Association for information.

The Committee on Constitution and By-Laws. This committee has been activated and disbanded at various times during the history of the Association. It seems that it should be a standing committee with a rotating membership in order to make the best use of experience in framing changes in the Constitution or By-Laws. The need for this committee is apparent when it is noted that a change or addition to one section of the By-Laws may sometimes make necessary a change in other sections in order to keep all sections in harmony and consistency. The necessity of harmonizing the many provisions of the Constitution and By-Laws makes it necessary for this Committee to have wide powers for wording amendments. These powers are to be, and we have confidence, will be exercised with good judgment by the personnel of the committee. Suggestions for changes in the By-Laws or Constitution should be made sufficiently in advance of submission to the Association to give this Committee the opportunity to reconcile the intent of the suggestion with the necessities of the By-Laws or Constitution so that both the mover and the Association may be assured of equitable treatment.

It is recommended that the Committee on Constitution and By-Laws be composed of three persons, appointed by the President, initially for terms of three, two and one years each, and thereafter one person appointed annually to replace the member whose term expires. The period of the appointment shall run from the day after the annual meeting has adjourned until the adjournment of the third succeeding annual meeting.

The duty of the Committee on Constitution and By-Laws shall be to prepare suitably worded proposals to amend the Constitution and By-Laws of this Association in keeping with the intent and spirit of any resolution to so amend which has been approved by the Association. The Committee shall submit any such proposal to amend within a reasonable time after the proposal has been made to the Association, for a vote in accordance with the By-Laws then in force. It shall have the duty of informing the Association of any other changes in the Constitution or By-Laws which, in its judgment will be made necessary by the adoption of the proposed amendment. It shall, upon request, advise with delegates or officers of the Association as to interpretations of the Constitution and By-Laws and assist, upon request, in the framing of resolutions directed toward the amendment of either of these documents. It shall have the duty of originating, clarifying or harmonizing amendments whenever it is apparent that the several sections of the Constitution or By-Laws are not clearly stated or are out of harmony with other sections.

The Committee on Educational and Membership Standards. The creation of a Committee on Membership Standards was first suggested in a resolution presented by Professor Lucius E. Sayre of Kansas University

"for the purpose of drafting rules definitely stating the requirements for admission to this Conference for the guidance of the Executive Committee in deciding the eligibility of applicants."

(Proc. 4th and 5th Ann. Meet. Amer. Conf. Pharm. Faculties, 1903, p. 21)

The Committee on Educational Standards originated as two committees suggested by President J. T. McGill of Vanderbilt University [Proc. Amer. Conf. Pharm. Faculties 1908, p. 12, 14] (1) Committee on Educational Facilities in the Different States (2) Committee on Schools. The functions of these two committees were

later merged and then eventually combined with the Committee on Membership Standards.

Through the years, this committee has been one of the forward looking and creative bodies of the Association. It has been argued in recent times that the functioning of the American Council on Pharmaceutical Education has reduced the necessity for the continuance of this committee; that accreditation by the ACPE is evidence enough that a college is eligible for membership in this Association and that the educational standards of the ACPE are all that this Association needs to be concerned about. It has been pointed out that "most of the problems which have been assigned to the Committee—by the Executive Committee—in recent years have also been studied by other committees or groups."

The Committee on Committees was of the opinion that the Committee on Educational and Membership Standards was of more value to the Association than the above criticisms indicated. It recommends its continuance as a standing committee with the composition and duties as follows:

It is recommended that the Committee on Educational and Membership Standards be composed of a Chairman and five other members appointed by the President initially in groups of two persons for terms of one, two and three years respectively and thereafter, two persons each year for terms of three years.

It shall be the duty of the Committee to keep the educational and membership standards of the Association under continuing scrutiny with regard to their relationships to the changing education and economic environment and to make recommendations for appropriate action when deemed necessary.

The Committee on Curriculum. The organization of this committee as a standing committee with a rotating membership dates from the annual meeting of 1948. In 1952-53 the number of members was increased from six to seven. The duties of this committee were itemized in its report to the annual meeting in 1949. There seems to be no reason to alter either the composition or the statement of responsibilities.

It is recommended that the Committee on Curriculum, a standing committee, be composed of a chairman and six other members each appointed to serve for a term of three years; the terms shall be ar-

anged so that not more than three new members shall be appointed in one year except to fill vacancies.

The duties of this committee shall be to conduct

1. A continuing study of the pharmaceutical curriculum with regard to (a) the needs of the profession, (b) the correlation of the curriculum with advances in general education, (c) the form and operation of the curriculum within the Colleges and School, (d) course analysis, (e) methods of teaching, (f) the achievement of students and graduates.
2. Such other duties as may be assigned to it by the Association from time to time.

The Joint Committee on Pharmacy College Libraries. It appears to the Committee on Committees that the Association needs the continuing services of a committee with this title. It is also apparent that the splendid and detailed work of Chairman C. O. Lee and the members of his committee prior to 1952-1953 has been of great help to newly organized colleges and those with problems of renewal of library facilities.

It has been stated by the present chairman of this committee that "The heart of the library problem has two parts—adequately trained personnel and adequate budget. The Committee on Libraries cannot provide either of these essentials. Items that can be provided by the Committee—book lists, periodical lists, sources of information, hints on stimulating the use of the library, et cetera, are all technical items that must be provided by the librarians in the final analysis. Therefore, why not deal directly with the librarian throughout the procedure?"

Information is available also that two groups of trained librarians, one from the Medical Libraries Association and one from the Special Libraries Association stand ready to cooperate with this Association. It was as a result of consultation with representatives from these two associations of librarians that the Committee on Committees recommends the change in title indicated above and the following definition:

The Joint Committee on Pharmacy College Libraries shall consist of six persons appointed by the President. Two members, one of whom shall be the chairman, from members of the faculties of member colleges, two representatives of the Medical Libraries As-

sociation ordinarily Librarians of Colleges of Pharmacy, and two representatives from the Pharmaceutical Section of the Science Technology Division of the Special Libraries Association, ordinarily industrial pharmacy librarians. The representatives of the cooperating Associations shall be appointed after consultation with an appropriate officer of each Association and the persons nominated by him. The terms of membership on this committee shall be two years except that the terms shall be initially arranged so that not more than half of the membership shall be changed in any year except to fill vacancies. It is suggested that it may be desirable, but not mandatory, that the representatives from this Association be chosen, one from a tax supported College of Pharmacy and one from a non-tax supported College.

The duties of the committee shall be to act as an advisory group to member colleges, to receive problems regarding the organization and use of libraries in colleges of pharmacy and to suggest ways and means for the solution of these problems.

The Committee on Relationships of Boards and Colleges. A review of the suggested functions and accomplishments of this committee as presently organized has led to the judgment that it performs a necessary and valuable function in the Association. Based on the organization of Boards and Colleges of Pharmacy into eight districts the Committee on Committees recommends:

The Committee on Relationships of Board and Colleges of Pharmacy shall consist of a chairman, appointed by the President, for a term of three years and the Secretary elected by each of the eight district conferences of Boards and Colleges of Pharmacy.

It shall be the duty of the committee to (1) suggest topics for discussion and study at the district meetings, (2) collect information concerning the activities at the district meetings, resolutions, passed which are directed to the annual meeting of the Association, papers presented, officers elected and other events that transpire in the meetings, (3) select important and significant parts of these programs and either present a condensed version in the annual report of the committee or submit the original papers for possible publication in the American Journal of Pharmaceutical Education or other preiodicals.

The Council on Conference of Teachers. This council is defined adequately in the By-Laws of the Association, Article VIII. The Committee on Committees has no changes to suggest.

Continuing Committees

The Committee on Problems and Plans. This committee was originated in 1934. One of its original functions was to study problems of pharmaceutical education which seemed to need special study and which no existing committee had under study. In a general way, it was the Association's answer to the growing need for The Pharmaceutical Survey. As problems became better delineated, they were referred to special or standing committees for intensive study.

In a previous survey made by a special Committee on Committees in 1945-1946, the functions of this committee were stated as:

"It shall be the duty of this committee to bring before the Association problems pertaining to professional education and to education in general and to call particular attention to those areas where general educational problems apply to pharmaceutical education; it shall also be the duty of this committee to define problems that pertain to pharmaceutical education and the welfare of this Association and to initiate a study of such problems and suggest plans for attack upon them".

The present chairman of this committee expresses a desire that the committee continue to be a large committee representing the vigorous youth of the Association from widely dispersed geographical areas. This request backed by the clearly indicated past results obtained by the committee, is approved by the Committee on Committees which recommends:

That the Committee on Problems and Plans, a continuing committee, consist of a Chairman and at least 24 members. It is recommended but not mandatory that at least three members be drawn from colleges of pharmacy within each of the eight districts of the AACP.

The functions of the committee shall be as stated by the Committee on Committees, [Amr. Journ. Pharm. Ed., 10, 500 (1946)] as quoted above.

The Committee on Status of Pharmacists in the Government Service. This is a committee appointed to assist in the work of a joint committee consisting of members appointed by the NABP, the APhA, and the NARD. It is recommended that the committee be continued and consist of a Chairman and two other members appoint-

ed by the President for terms of one year each. The functions of the committee shall be to cooperate with other members of the joint committee to the end that the armed services and federal, state and municipal employers of pharmacists be kept constantly informed of the current state of pharmaceutical education as it bears upon the present and potential duties and responsibilities of pharmacists in these services. The committee shall keep the Association informed of the status of and any change in status proposed for pharmacists in any of the services and shall act for the furtherance of professional status in all services when such action is requested or approved by the Association or its Executive Committee.

The Committee on Predictive and Achievement Tests. In the opinion of the Committee on Committees, this committee has under consideration an important aspect of pharmaceutical education which should be developed and brought to a state of accomplishment as soon as possible.

The Committee on Committees recommends:

1. That the Committee on Predictive and Achievement Tests, a continuing committee, consist of a Chairman and five other members appointed by the President for terms of one year each.

2. That the functions of this committee shall be (1) to study the problems of determining the aptitudes and of predicting the academic performance of students and prospective students of pharmacy, (2) to study the available tests for determining the foregoing, to collect data which would enable the evaluation of these tests for the purpose, (3) to make recommendations as to the use of and (if considered advisable) the method of administration of such tests, (4) to study the problems of determining the level of competence of students of pharmacy and (5) to make recommendations as to the nature, value, scope and administration of achievement tests.

The Committee on Audio-Visual Education. This committee originated as the result of a recommendation by former President Jenkins in 1946. It was called the "Special Committee on the Application of Technics Used in the Armed Forces to Pharmaceutical Instruction". Its name was changed to the present one in 1948. The creative activity of this committee during its short life prompts the Committee on Committees to recommend the continuance of this committee and:

1. That the Committee on Audio-Visual Education, a continuing committee, consist of a Chairman and five other members appointed by the President for terms of one year each.

2. That the functions of the committee be related to the stimulation of interest in and creative use of modern teaching aids by teachers in colleges of pharmacy.

The Committee on Civil Defense Education. This committee was a special committee which became a continuing committee at the request of the Chairman in order that a definitive report might be made. It is anticipated that a recommendation for the discontinuance of the committee will be made when its task is completed. The Committee on Committees provides for the continuation of this committee, should it request continuance by the recommendation.

1. That the Committee on Civil Defense Education, a continuing committee, consist of a chairman and four other members appointed by the President for terms of one year each.

2. That the functions of the committee are to outline a minimum list of subject matter items covering material which would be required in order that pharmacists and students of pharmacy could adequately cope with the responsibilities and situations with which they may be confronted in cases of civilian disaster caused by military attack.

The Committee on Activities for Alumni. Elsewhere on this program, the Chairman of this committee will present a comprehensive survey of the activities of this committee and its predecessors since 1916. Based upon this report and his forecast of the future of the committee, the Committee on Committees recommends:

That the Committee on Activities of Alumni be discontinued.

The Committee on Pharmaceutical Research. This committee originated from a recommendation contained in the Presidential report of Dean H. C. Newton in 1943. [Amer. J. Pharm. Ed., 7, 460 (1943)] and was further instructed by the Committee on Committees of 1946. It is the recommendation of this Committee on Committees

That the Committee on Pharmaceutical Research be discontinued.

The Committee on Graduate Study. This committee was recommended by Dean Glenn L. Jenkins in his Presidential Report of 1946 [Amer. J. Pharm. Ed., 10, 45 (1946)]. Its functions were clearly stated in the report of the Committee on Committees of 1946. It

appears that the functions of this committee as well as that of the preceding one on Pharmaceutical Research are now better performed through the activities of the Conference of Teachers of Graduate Studies. It is recommended:

That the Committee on Graduate Study be discontinued:

The Committee on Personnel Problems. This committee was authorized in 1941 as a portion of a joint committee with the APhA, NABP, and NARD. In its first report, the joint committee showed its intention of getting information on working hours, rates of pay, provisions for days off and paid vacation periods.

The history of the joint committee is not clear, but in recent years the Association's committee has functioned independently. It has considered a variety of problems related to faculty personnel and professional manpower supply. It is the recommendation of the Committee on Committees:

The the Committee on Personnel Problems be discontinued.

The Committee on Emergency Problems. This committee grew out of the War Emergency Advisory Committee and it was charged as follows: [G. L. Jenkins, Amer. J. Pharm. Ed., 10, 47 (1946)]

"that this committee continue to function in close cooperation with committees from allied organizations in pharmacy; and that it be assigned the tasks of securing consideration for the deferment of superior students in pharmacy so that they may complete their training and of securing the inclusion of pharmacy in any government plan for education and research in the war against disease".

There seems to be little value in maintaining a continuing committee on emergency problems. A truly emergency problem, it would seem, needs a special committee with talents and qualities peculiarly suited to the solution of that problem. It is to be expected that any member of the staff of any member college would make himself available for the solution of an emergency problem affecting the profession or this Association. The President or the Chairman of the Executive Committee should have authority to appoint special committees to act for the Association in emergencies. It is recommended:

That the Committee on Emergency Problems be discontinued and that the President or the Chairman of the Executive Committee be authorized to appoint a special committee of one or more persons

to represent the Association in emergency situations which can not be considered adequately by existing standing or continuing committees.

Summary

The Committee on Committees is aware that adequate consideration of this voluminous report cannot be given at this annual meeting. It has prepared mimeographed copies for distribution and wishes to summarize the report as follows:

A study of the existing committees of the Association has been made. Definitions have been proposed for the classification of committees into (a) Standing, (b) Continuing, and (c) Special Committees. Recommendations have been made as to (1) the number and tenure of committee members and (2) the functions or duties of the committees. Recommendations have been made for the discharge of certain committees. For immediate action, the Committee on Committees recommends:

1. That the following committees of the Association be discontinued after the receipt of their reports at this meeting.
 16. The Committee on Activities for Alumni
 17. The Committee on Pharmaceutical Research
 18. The Committee on Graduate Study
 19. The Committee on Personnel Problems
 20. The Committee on Emergency Problems
2. That the Committee on Committees be continued for one more year so that it may receive comments and suggestions with respect to the report distributed at this meeting from delegates and officers.
3. That as a result of the comments received before January 1, 1954, the committee revise and edit the report and submit the result to the Executive Committee and, if approved, for publication in the *American Journal of Pharmaceutical Education*.
4. That those recommendations in the revised report which make it necessary to amend the By-Laws be called to the attention of the Committee on Constitution and By-Laws for appropriate action at the next annual meeting.

G. L. WEBSTER, *Chairman*

Minutes of the Interim Meeting Executive Committee American Association of Colleges of Pharmacy

Palmer House, Chicago, Illinois

January 27-29, 1954

Chairman Zopf called the meeting to order at 10:30 a.m., January 27.

Present: Burt, Daniels, Deno, Lyman, Parks, Reif, Webster, Youngken, Zopf. Absent: Hiner. (Dean Daniels was absent during part of the meeting to attend meetings of the ACPE concurrently being held in an adjacent room).

On motion of Parks-Reif, *it was voted* to approve, as distributed to members of the Executive Committee, minutes of the meeting held in Utah on August 14 and 15, and on August 18, 1954.

A revised agenda consisting of the numbered items of these minutes was then considered.

1. *Communications.*

- a. Letter from Dean Hiner explaining the reason (a mission to Hawaii for the University of Utah) for his absence and expressing regret over this unavoidable coincidence of obligations. Members of the Executive Committee share this regret with Dean Hiner.
- b. Summary of correspondence with the Acting Comptroller of West Virginia University relative to requirements of the West Virginia law covering memberships of state educational institutions in national associations. The Secretary has written the Acting Comptroller that the contract required in order to permit payment of Association dues by West Virginia will be furnished as soon as the form approved by the West Virginia Director of the Department of Purchases is received. Under date of January 11 the Acting Comptroller wrote: "May we let this matter rest a little while longer." Attention was directed to Article II of the By-Laws, which will apply in this situation if there is undue delay in receipt of the approved form.
- c. Communications from the Secretary of the American Pharmaceutical Association relative to an interprofessional conference, sponsored by the A Ph A, February 4, 1954. Presi-

dent Reif and Dr. Webster were chosen to represent the AACP at this important conference. On motion Parks-Youngken, it was voted to authorize payment of expenses from the contingency fund.

- d. Telegram from Dr. Fischelis, expressing regret at his ability to attend the Chicago meetings. Members of the Executive Committee share this regret with Dr. Fischelis.
- e. Communications dated January 8 from Secretary Claus, Conference of Teachers. These concern certain changes in Article VIII of the By-Laws of the AACP as well as comparable changes in the By-Laws of both the Conference of Teachers and the Sections of Teachers. On motion Burt-Reif, it was voted to refer these questions to the chairman of the Committee on Constitution and By-Laws.
- f. Several letters relating to the brochure. Deferred for consideration under Item 7.
- g. Letter from the Chairman, Committee on Audio-Visual Education. Deferred for consideration under Item 16.
- h. Letter from Dr. Hoch, expressing appreciation for the co-operation extended to the Plant Science Seminar on the occasion of the Seminar in Pharmacognosy held in Salt Lake City last summer. The Chairman of the Executive Committee has replied to this communication and no further action was considered necessary.

2. *Proposals for additional items to be placed on the agenda of this meeting.* Several items were added to the agenda previously prepared by the Chairman of the Executive Committee and are included in these minutes.

3. *Report of the Chairman.* Dean Zopf directed attention to the *Report on Enrollment in Schools and Colleges of Pharmacy 1953-54*, and commented briefly on data of particular interest from this Report.

He questioned the value of continuation of the practice of collecting detailed data on breakdown of enrollment for undergraduate students studying pharmacy under the provisions of the various GI Bills. It was decided to request that this item be placed on the agenda for the joint meeting with the ACPE in order to determine whether or not these statistics were of sufficient value to warrant continuation of their collection.

Desirability of having annual data on the curriculum pattern (0-4, 1-3, etc.) of each member college was stressed. It was decided likewise to request addition of this item to the

agenda of the joint meeting in order to determine whether or not the Secretary of the Council could provide these data annually to the Secretary of the Association.

4. *Discussion of items for consideration at the joint meeting with the ACPE.* In addition to the two items mentioned in Item 3, the following matters were presented for addition to the agenda of the joint meeting.

Desirability of a report in summary of current situations in colleges examined by the Council, to be made by the AACP representatives on the Council and to the Executive Committee of the Association.

Consideration of complaints by member colleges regarding low admission standards in other member colleges.

It was decided further to request addition of these two items to the agenda for the joint meeting.

5. *Consideration of a request from a member college for guidance on definition of "minimum load for full-time enrollment."* An exchange of correspondence between a member college and the Chairman was read. There was considerable discussion concerning interpretation by the Executive Committee of the so-called three-year rule. Since this matter also involves the ACPE and since it properly falls under Item 6 of the agenda for the joint meeting, it was decided to defer further discussion until the afternoon when the question could be raised before members of both the Council and the Executive Committee. (See 5. *Continued*, after item 6).

6. *Joint Meeting with the American Council on Pharmaceutical Education during the afternoon of January 27.* At this meeting there was discussion of a number of matters of mutual interest and in this connection reference is made to the minutes of the joint meeting, attached to the original copy of these minutes as Appendix A.

5. *Continued.* In the light of the discussion at the joint meeting of Item 5, these minutes, on motion Youngken-Deno, it was voted to instruct the Chairman to request the Dean of the member college involved to transmit the specific residence requirements of his institution, and for the Chairman to attempt to interpret them in keeping with the By-Laws

of the Association and the *Accreditation Manual* of the Council.

On motion Burt-Youngken, it was voted to keep this item on the agenda for further discussion at this meeting or for discussion at the next meeting of the Executive Committee, in order that a definite understanding concerning the so-called three-year rule will be reached. In this connection it is recommended that the Secretary attempt to determine the situation in member colleges with respect to residence requirements.

7. Report on the status of "*Shall I Study Pharmacy?*". Dr. Deno, Chairman, Committee on Brochure, gave a brief report on the status of *Shall I Study Pharmacy?* The number of copies printed to date is 70,700, of which 24,300 copies have been sold. Fairly firm commitments for 20,000 additional copies have been received. The first printing (20,300) carried the names of ten member colleges who have contributed illustrations, in small print on the back cover after the statement of appreciation. The second printing (50,400) omits these ten names and substitutes "member colleges." This was done to make the brochure as completely anonymous as possible.

Two-thirds of the colleges have ordered brochures and in at least ten states effective distribution to guidance personnel in high schools and feeder colleges has been or is being made. The consensus of those who have written concerning the brochure is that it is a reasonably satisfactory guidance booklet. A number of constructive critical comments were enumerated. These are being referred to the Committee on Brochure for consideration at the time the publication is revised.

During the past few weeks requests have been received for quotations on the brochure in lots of 1,000 or more. The Committee on Brochure recommends that the price in lots of 1,000 be \$180 per thousand. This is the lowest figure that can be quoted on lots of 1,000 or more without losing money on the publication. On motion Webster-Burt, it was voted to approve sale of the brochure at the rate of \$180 per thousand in lots of 1,000 or more. The Secretary was instructed

to notify the Deans of member colleges concerning this change.

During the past few weeks the Secretary has been fulfilling all requests (a total of a very few hundred) for individual copies of the brochure from high school students and counselors who have not enclosed the cost of an individual copy. It was the consensus that this practice should be continued.

Need for continuation of the Committee on Brochure was emphasized. The functions of the Committee should be to aid in the effective distribution of the publication, to supervise revision when such revision is called for, and to attend to other matters directly connected with the brochure. On motion Burt-Youngken, *it was voted* to continue the present Committee (Parks; Zopf; Deno, Chairman).

Initial mailing of the brochure did not include related organizations in the health sciences. It was suggested that such organizations should receive an information copy of the brochure, and the Secretary was directed to transmit these copies.

Interest in the brochure on the part of veterans' counselors in the universities and colleges was pointed out. The Secretary was instructed to suggest to the Deans that copies of the brochure be brought to the attention of these individuals.

Interest in the brochure on the part of guidance personnel working with various branches of the Armed Forces was emphasized. The Secretary was instructed to find out, possibly through USAFI, the proper officers to whom copies of the brochure should be sent and to send them information copies.

The following communications relative to the brochure were presented:

- a. A request from the Director of Occupational Information and Guidance, Territory of Hawaii, for transmittal gratis to approximately one hundred and ten high school counselors in the Islands of a copy of the brochure. In the case of distribution within the continental limits of the United States, the Association is not in a position to assume such financial responsibility. Because of the absence of a college of pharmacy or other well-known channel for distribution in Hawaii, on motion Parks-Burt, *it was voted* to instruct the Secretary to comply with this request from Hawaii.

b. A request from the Dean of a member college for permission to quote material from the brochure. In the discussion of this request, the praiseworthy efforts toward dignified recruitment in connection with which these quotations are desired was noted. It is hoped that the brochure will be used to supplement such recruitment programs rather than as a sourcebook for information to be quoted extensively. The brochure is not copyrighted, and the Executive Committee is not in favor of taking out such copyright. It is hoped, however, that widespread direct quotation will not be made, and in those instances where quotations are taken from the brochure, that proper credit for the source of the materials will be given. On motion Parks-Burt, it was voted to discourage extensive quotation, to encourage use to supplement materials prepared locally, and to request that credit be given the Association for any quotations made from the brochure.

c. Correspondence with Mr. Carl Willingham, Secretary of the National Association of Chain Drug Stores and with Mr. Scott C. Rea, Chairman, NACDS Pharmacy Committee. For several months the Secretary of the AACP has been aware of interest in the brochure by representatives of the NACDS. The latter organization has considered a publication of its own along the lines of the brochure. Instead, as a result of action by their Executive Committee in January, they have offered cooperation in financing distribution to counselors, librarians, pharmacists, and others of *Shall I Study Pharmacy?*, where cooperation is desired. The following quotation from a letter to active members of the NACDS from Mr. Rea indicates the channels through which they propose to effect this cooperation:

"May I suggest that you contact first the Dean or Deans of your local colleges of pharmacy and then the secretary of your own state pharmaceutical association and let us know what plans are being made to provide the necessary funds at the state level to enable the colleges to purchase and distribute the brochures."

The Executive Committee recognized the cooperative attitude expressed by the NACDS and expressed approval of the channels proposed.

d. Offer of cooperation from Mr. Charles D. Doerr, Vice President, McKesson & Robbins. The proposal from this source is to prepare a throw-away describing the brochure and enclosing a postcard addressed to the Secretary of the Association, requesting a copy of the publication. Upon return of the postcards to them and notification that the request had been fulfilled, McKesson and Robbins would redeem each card and thus cover the cost of distribution of the brochure to pharmacists sufficiently interested to request a copy. The Executive Committee instructed the Secretary to accept with thanks the offer of Mr. Doerr.

e. From Dr. R. P. Fischelis, Secretary of the APhA, concerning supplying the brochure gratis to individuals who write the APhA for publications of this type. While the Executive Committee is willing to underwrite the cost of free distribution of individual copies where the

request is directed to the College Association, financial problems will not permit distribution to other organizations for similar transmittal. The Secretary was instructed to relay this information to Dr. Fischelis.

8. *Report on the meeting of the Joint Committee on Pharmacy College Libraries.* Dr. Deno, Chairman of the Joint Committee on Pharmacy College Libraries, reported briefly on the two-day meeting of the Committee held in Ann Arbor in November. Two representatives from the Medical Library Association, two from the Special Libraries Association, and two from the AACP had met and discussed a program of action for the current year. This report was ordered received by the Executive Committee.

The Library Committee meeting brought forth the suggestion that a seminar on librarianship and library problems in colleges of pharmacy would be most helpful. The Executive Committee was favorably impressed by this suggestion and deferred further discussion of it to Item 28, these minutes.

9. *Activation and composition of a Public Relations Committee on Pharmaceutical Education.* President Reif reviewed his recommendations made in the address last August of the incoming president (see Oct. 1953 Journal, p. 527; and resolution III, 6, p. 692). On motion Parks-Burt, *it was voted* to approve activation of such a special committee, to consist of two representatives from the Association, with the understanding that President Reif would be a third member *ex officio*, and to request the American College Public Relations Association to appoint two or three members to serve with the AACP representatives.

During the next few months a meeting of this committee is anticipated for the purpose of initiating studies on the problems of public relations as they apply to pharmaceutical education. On motion Burt-Webster, *it was voted* to authorize payment of expenses of the college representatives to this meeting from the contingency fund. It is understood that the ACPRA will pay the expenses of their representatives to the Committee meeting.

10. *Discussion of ways and means whereby members of the Association can be informed on current developments on dignified quality recruitment.* In this discussion the policy

of recruiting personnel for industry from non-pharmacy graduates as well as from graduates in pharmacy was discussed.

Outline of a program for dignified quality recruitment of pharmacy students as is being implemented in Wisconsin was presented. (An outline of this program is attached to the original copy of these minutes as Appendix B). Included in this program is establishment of undergraduate scholarships to be financed by pharmacists throughout the state. This plan is believed to have the advantage of not only stimulating and encouraging student interest in pharmacy, but of interesting and enlisting the support of practicing pharmacists in this important problem.

Partly because of publication of *Shall I Study Pharmacy*, attention is being given to quality recruitment in several states. It may prove feasible later to summarize these programs, but no further action was considered indicated at the present time.

11. *Location, dates, and program of the annual meeting of the Association.* The 1954 annual meeting is to be held in Boston, August 22-24.

Decision of the APhA to hold spring meetings rather than summer meetings beginning in 1955, and the effect of this decision on the annual meeting of the College Association was discussed in some detail.

The Chairman discussed the inadequacies of time that have characterized our recent annual meetings. The consensus of the Executive Committee is that some plan must be evolved, effective in 1955, whereby a longer period of time is available for the various sessions of the Association as a whole as well as for the section meetings of the teachers' conferences.

An integrated program was discussed, wherein the meetings of the AACP would be interspersed throughout a week among those of the APhA. This type of program did not meet with general approval.

An alternative proposal was discussed: to convene the meetings of the AACP on the Friday preceding the week of the APhA meetings, and to meet Friday, Saturday, Sunday

afternoon, and Monday. This proposal was considered favorably by the Executive Committee. On motion Webster-Reif, *it was voted* to report favorably on this recommendation for 1955 to the Association at the annual meeting next August.

Since the knotty problems surrounding time, place, and length of the annual meeting are of direct and personal interest to all members of the Association, it was the opinion of the Executive Committee that this topic should be opened for discussion this spring at the meetings of the Districts of Boards and Colleges.

Article XVIII of the By-Laws, Order of Business, has been subject to some criticism. The Chairman requested members of the Executive Committee to study this Article and to submit their suggestions concerning possible revision and improvement.

The problem of adequate time as well as the timing relationships for the various meetings of the Conference of Teachers and the Sections of Teachers was discussed. The consensus was that the Secretary be instructed to make the best arrangements possible under the schedule for the 1954 annual meeting and, further, that the demands of this important segment of the annual meeting be carefully considered in plans for future meetings.

The joint banquet of the AACP with the NABP was discussed. The consensus was definitely in favor of continuation of the joint banquet. This year arrangements are in the hands of the NABP.

The procedure followed last year for roll call, whereby shortened designations were used for the colleges, was unanimously favored and will be continued this year.

The Secretary directed attention to a deficiency on his part this year in not listing for the Editor the names of all representatives from the colleges present at the annual meeting. After considerable discussion, it was decided in the future to confine the register on the inside cover pages of the Journal to the names, mailing addresses, and principal executive officers of the member colleges. A separate list of delegates, alternates, and other representatives will be carried elsewhere in the Journal.

The question of also publishing in the Journal a list of members in attendance at the December meeting of the Pharmacy Sub-Section of the AAAS was discussed. Since this practice might logically lead to publication of lists of members in attendance at chemistry and other meetings, there was some expression of sentiment against the practice. No decision was reached on this matter; it was left to the judgment of the Editor.

The problem of publicity at the next annual meeting of the Association was discussed. This matter was referred to the recently constituted Public Relations Committee (see Item 9, these minutes).

12. *Publication of abstract of actions taken at the annual meeting.* Attention was directed to a motion previously passed by the Executive Committee directing the Secretary to prepare for publication in the Journal a list of specific actions taken at the annual meeting. The object of such a summary is to pinpoint decisions taken at the annual meeting and requiring action on the part of Committees or officers. The Secretary was instructed to prepare such an abstract in the future for publication in the October number of the Journal.

13. *Expansion of membership of the AACP to include faculty members as dues-paying associate members.* This proposal was presented because of financial needs of the Association and in the light of a similar type of membership in the Association of American Medical Colleges. The consensus did not favor adoption of the proposal.

14. *Report of the Committee on Committees.* Chairman Webster discussed the report of this Committee.

On motion Burt-Reif, *it was voted* to approve the proposal to designate the Committee on Libraries as the Joint Committee on Pharmacy College Libraries.

On motion Parks-Burt, *it was voted* to list the standing committees in an appendix to the constitution and by-laws to serve as a guide to the officers and to the Committees themselves.

Revisions of the report were discussed with particular attention directed to the time of appointment of the Commit-

tee on Resolutions, to be changed from the first session of the annual meeting to a time prior to the annual meeting, and to a number of changes in the section dealing with the duties of the Committee on Libraries. On motion Parks-Youngken, *it was voted* to approve the report of the Committee on Committees as amended.

After discussing publication of the final and complete report, on motion Webster-Youngken, *it was voted* to attempt to arrange publication in such a way that two reprints could be made available, one dealing with the Committees themselves and including outlines of their duties, and a second specifying the duties of the officers of the Association.

15. *Policy for the American Journal of Pharmaceutical Education.* Editor Lyman presented the following matters upon which he wished advice from the Executive Committee.

a. Policy concerning a standard discount to subscription agencies for back volumes of the Journal and for individual current subscriptions. After discussion, on motion Webster-Youngken, *it was voted* to allow a 15% discount to such agencies on complete sets of back volumes only; none on individual back volumes or on current subscriptions.

b. Cuts and pictures in the Journal. Over the years these have been held to an almost irreducible minimum because of expense. The Editor expressed the opinion that a restricted number of cuts costing about \$100 a year would add to the attractiveness of the Journal as well as helping to clarify certain articles. The Editor was authorized to arrange for such cuts within the limits suggested here.

c. Publication of Committee reports, formal papers read before sections and before the general sessions, and informal talks, such as may be given at the joint banquet. After some discussion, it was decided that in case the Editor wishes advice concerning these matters he should consult the Publications Committee.

d. Publication of the 1953 Report of the Committee on Personnel Problems. This valuable report, consisting of a roster of personnel in the colleges, was discussed. Because of the impermanent nature of the material, on motion Deno-Youngken, *it was voted* not to publish it.

e. Request by The American Trade Press Bureau for subscription to their clipping service. It was decided not to subscribe.

f. Reprints of Journal articles of continuing value to officers and committees of the Association. It was decided that complete galley for the Journal should be sent to the Secretary in order to determine if certain data of general nature would be needed for future activities of the Association. In the event that such need is visualized, the Secretary was authorized to order a limited number of reprints of such data for distribution from his office.

g. Possible change in printer. This subject was discussed and the Chairman of the Executive Committee was instructed to solicit bids for the Journal again, with the hope of possible savings in printing costs.

h. List of subscribers. The consensus was that the official list of subscribers should be considered to be that of the secretary's office. Editor Lyman indicated that it would be possible to get a complete list from the printer of all those to whom the Journal is currently being sent, including paid subscriptions as well as subsidized ones. The Committee requested him to obtain two such lists, one for the Chairman of the Executive Committee and one for the Secretary. From these lists the Publications Committee was instructed to prepare recommendations for the next meeting of the Executive Committee concerning the official subscription list of the Journal.

16. *Requests from the Committee on Audio-Visual Education.* Under date of January 7, Chairman Brodie wrote drawing attention to non-recurring expenditures at the time of last summer's Seminar, which depleted the Committee's funds for the current year to the extent of \$200.00. He requested supplementary appropriation sufficient to cover these expenditures. On motion Webster-Parks, *it was voted* to transfer \$200.00 to the Committee on Audio-Visual Education from the contingency fund.

Chairman Brodie also requested approval of announcement of the Award and the area of competition for 1954-55. On motion Webster-Burt, *it was voted* to approve these requests. It is understood that this approval intimates subsequent appropriation of sufficient funds to cover the award.

17. *Consideration of 1953 Resolution I (4), (see P. 691, October 1953 Journal), dealing with establishment of a special Joint Committee on Hospital Pharmacy Education by the AACP and the ASHP.* After discussion concerning the urgent need for such a committee in the light of increasing numbers of plans to establish hospital internship programs in pharmacy, on motion Youngken-Burt, *it was voted* to request the ASHP to join with the AACP in the appointment of a special committee to explore areas of mutual interest and spell out in general terms the problems pointed up under the title "Educational Objectives in Hospital Pharmacy" in the Report of the President for 1953 (see p. 521, October 1953 Journal). It is recommended that this special committee, when constituted, elect its own chairman. President Reif stated

that he would welcome suggestions from Dean Zopf and from others for the Association appointees.

18. *Implementation of 1953 Resolution II, 5 (see p. 691, October 1953 Journal).* This resolution deals with the requirement of (a) pre-pharmacy instruction and (b) the degree to be granted for the prescribed course, these to become effective on and after April 1, 1965. Note that the approval by the Committee on Resolutions and subsequent adoption by the Association provides that the two proposals are to be voted upon separately.

In connection with (a), Chairman Zopf read a letter from Secretary Costello, NABP, pointing out that for legal reasons it would be better to reword the resolution from the College Association so that the requirement would be stated in terms of a beginning date (1960) rather than an ending date (1965). Dr. Costello pointed out that the adoption of such a procedure would accomplish exactly the same objective as the amendment proposed in Resolution II, 5.

It was pointed out that under our By-Laws such a change could not be effected to be voted upon in 1954. Therefore, the amendment, exactly as stated in the Report of the Committee on Resolutions, will be voted on at the next annual meeting.

The logic of Dr. Costello's statement is clearly recognized and on motion Parks-Burt, *it was voted* to instruct the Committee on Constitution and By-Laws to submit to the next meeting of the Executive Committee a rewording of Article I Paragraph 7 (a) which would maintain the essence of the currently proposed amendment, but which would state the requirement in terms of a beginning date instead of a graduation date. It is emphasized that this motion does not anticipate any change in intent with respect to the effective date called for in the currently proposed amendment.

A letter was read from Dean Crossen of Oregon State College objecting to designation of the degrees granted for completion of the program in pharmacy. The implication is that reference to degrees should be omitted.

There was discussion of the matter of degree or choice of degrees to be granted, with several members favoring the

possibility of granting a professional degree such as the Bachelor of Pharmacy for completion of the extended program. Consideration was given to the possibility of awarding two degrees, a Bachelor of Science in Pharmacy, indicating completion of a four-year undergraduate program, and a Bachelor of Pharmacy, indicating additional professional work beyond a total of four years.

On motion Daniels-Webster, *it was voted* to instruct the Committee on Constitution and By-Laws to consider the matter of degrees, including the situation at Oregon, and to present recommendations at the next meeting of the Executive Committee.

The situation in a second member college, which is currently granting the Doctor of Pharmacy degree for completion of a six-year total program, was discussed. At the present time it does not appear feasible to alter the By-Laws in order to cover this situation. However, it may be feasible for the Executive Committee to express a favorable opinion concerning this degree. This matter will be considered at the next meeting, when the recommendations on degrees is received from the Committee on Constitution and By-Laws.

19. *Consideration of 1953 Resolution VII, C, 15 (see p. 694, October 1953 Journal) on the "possibility of establishing and maintaining a roster of professional personnel and teachers' placement bureau."* Two projects appear to be involved here. A roster of teaching personnel was provided last year by the Committee on Personnel. In the opinion of several members of the Executive Committee this roster has proven to be a useful instrument. Undoubtedly, it has certain inaccuracies, and in order to have a complete accurate roster, it would be necessary for annual revision involving considerable detailed work and expense.

The suggestion to establish a teacher placement bureau has been made previously and has never been adopted, in part because of expense.

The consensus was that no action is practicable concerning either of these proposals at present.

20. *Consideration of 1953 Resolution III, 6 (see p. 692, October 1953 Journal, and The Installation Address of The In-*

coming President, p. 524, October 1953 Journal). On motion Parks-Reif, it was voted to refer this matter to the Public Relations Committee on Pharmaceutical Education (see Item 9, these minutes).

21. *Consideration of complaints by member colleges regarding low admission standards in other member colleges.* Two communications were read containing such complaints. This knotty problem was discussed in some detail both in this meeting and in the joint meeting with the ACPE.

The consensus of these discussions was that institutions making complaints of this type should be requested to furnish the Executive Committee with the names of colleges and students involved. Where such is done, authorized representatives of the Association will undertake the proper investigations.

22. *Election of a representative to the National Drug Trade Conference.* The Secretary was instructed to write to the Secretary of the NDTC requesting information on current regulations of the Conference with respect to representatives and to inform Chairman Webster of the Committee on Committees the results of this action in order that the report of his Committee may be accurate in this respect. The Chairman will again include Item 22 on the agenda for the next meeting of the Executive Committee.

23. *Nomination of a Director to the AFPE.* At the last meeting of the Executive Committee, Dean Burt was nominated as a Director of the Foundation to fill the post which will be vacated this year by the expiration of the term of Dean Newton. Since the time of this nomination, plans have materialized for erection of a new pharmacy building at Nebraska and because of the excessive amount of detailed planning involved and the press of additional duties, Dean Burt requested that his name be withdrawn as nominee for this post. On motion Youngken-Webster, it was voted with reluctance to grant this request.

Professor Linwood Tice was nominated and there being no additional nominations, on motion Youngken-Burt, it was voted to declare the nominations closed and instruct the

Secretary to cast a unanimous ballot for Professor Tice as our nominee.

Expression by the Secretary of the Foundation of high regard for the services rendered by Dean Newton, as indicated in a letter to the Chairman of the Executive Committee, was acknowledged. The President was requested to thank Secretary Briggs for this letter and to express our appreciation for the fine manner in which Dean Newton has represented the Association on the Board of Directors over the years.

24. *Representation at the 1954 District Meetings of Boards and Colleges.* The consensus was that the President, President-elect, Chairman, and Secretary-Treasurer should continue to serve as representatives of the Association at the eight District Meetings, each attending two meetings, neither of which is to be the meeting of his own district.

A tentative schedule of assignments was worked out, and as soon as these can be made definite, they will be transmitted to the Secretaries of the Districts, the Secretary of the NABP, the members of the Executive Committee, and the deans of member colleges. Included with the schedule is to be a request to the Secretaries of the Districts that place be reserved on the program for "ACCP Activities," by the official representative.

The importance of continuing two-way exchanges of ideas between the districts and the Association was emphasized. The Chairman stated he would include on the agenda for the next meeting of the Executive Committee the item of reports from the Association representatives at the district meetings.

Reference was made to a discussion of district meetings of boards and colleges in the 1953 Report of the President (see p. 522, October 1953 Journal). It was suggested that any items for "ACCP Activities" be referred to Chairman Zopf promptly in order that he can consolidate these items and forward them to the official representatives.

Topics suggested for informal discussion were (a) nomenclature of the extended program, with particular attention to emphasis on "pre-professional instruction" and "professional instruction"; (b) increase in number of colleges now having an extended program; (c) the problem of

degree to be granted for an extended program; (d) the nature of refresher courses offered by the colleges and practicing pharmacists.

25. *Representation at the meetings of the American Council on Education.* Because the annual meeting of the ACE, now held in October, is so large as to necessitate several section meetings, the ACE has requested each constituent member to appoint six representatives. It does not appear financially feasible for the College Association to plan for all six members to attend the meeting or meetings of the ACE each year. On motion Burt-Daniels, *it was voted* to designate two principal delegates and two sets of two alternate delegates each, each principal delegate thus having a first and second alternate. The principal delegates and the alternates for next year will be named from our six delegates at the next meeting of the Executive Committee.

26. *Policy on representation at meetings of other associations in which the AACP holds membership.* Organizations not covered under earlier Items include the AAAS, the Medical Library Association, the Special Libraries Association, and the American Society for Medical Research. Last year the Chairman of the Committee on Libraries attended the annual meetings of both library organizations.

There was considerable discussion about the desirability of representation in other national organizations, particularly from the standpoint of public relations on pharmaceutical education. The consensus was that the members of the Executive Committee should give careful thought to this matter and be prepared to discuss it at the next meeting.

27. *Progress report on the 1954 Teachers' Seminar on Pharmaceutical Education.* Chairman Zopf briefly described the plans for the Seminar and stated the dates are to be from Sunday evening, August 15, through Friday afternoon, August 20. Plans for the Seminar are well along and clearly indicate it will be of value to every teacher in all our colleges.

The Chairman then discussed details in connection with the finances of the Seminar and presented a budget totaling \$8,825. He explained that this budget had been carefully worked over and reworked, and that because of the nature of

this year's Seminar it does not appear possible to conduct the sessions in an effective manner on a smaller budget. Details of this problem will be presented to the Foundation at their meeting in April with the request that \$8,500 be appropriated for the 1954 Seminar.

28. *Topics and invitations for the 1955 Seminar.* At the meeting in November of the Joint Committee on Pharmacy College Libraries, there was unanimous agreement on the desirability and need for a Seminar on Librarianship, designed especially for librarians and teachers in colleges of pharmacy, but not necessarily restricted to college personnel. Members of the Executive Committee were favorably inclined toward this recommendation from the Joint Committee on Pharmacy College Libraries.

There was also favorable comment on the need in the near future for a second Seminar on Pharmacy, perhaps with particular emphasis on hospital pharmacy. Attention was directed also to the need for a Seminar on Professional Orientation, using the term in the broad sense indicated in "The Pharmaceutical Curriculum" by Blauch and Webster. The logic of combining library problems with those of orientation in a single seminar was also discussed. Another topic considered suitable for future seminars is that of Professional Relations of the Retail Pharmacist, emphasizing ways and means of developing understanding and proper appreciation of these relations in students.

The consensus was that the 1955 Seminar should be discussed at the 1954 meeting of the Association. The Secretary was instructed to include this topic on the program of one of the general sessions, with sufficient time allotted for an open forum.

The Chairman stated that decision on the 1955 Seminar must be made not later than August and that he would include Item 28 on the agenda for the re-organization meeting to be held immediately after the annual meeting in August 1954. (He further indicated that the reorganization meeting would undoubtedly have to be expanded beyond the brief sessions that have been held in the past).

29. *Withholding tax of employees of the Association.* The Secretary stated that application has been made for a number and that withholding reports will be made henceforth as required by law.

30. *National Pharmaceutical Council, Inc.* The formation of this organization, a new one in the national field dedicated to the solution of certain problems, principally of manufacturers, was pointed out. The Chairman stated that he would attempt to keep track of the program being developed by this Council.

31. *Value of so-called "core" courses and their relationship to pre-pharmacy instruction.* President Reif reported briefly on this topic in the light of curriculum developments at his institution. He stated he would continue to observe developments at Pittsburgh and report later concerning them to the Executive Committee.

32. *Course content of a curriculum when the first two years of a total program are taken at a junior college.* The consensus was that this matter should be referred to the Committee on Curriculum.

33. *Status of pharmacists in the Armed Forces.* Information on this topic additional to that presented in the Report of the President last year (see p. 523, October 1953 Journal) was presented. These data confirmed the impression that there is urgent need to re-evaluate the services of the pharmacists in the Armed Forces. On motion Daniels-Webster, *it was voted* to transmit the additional information to the Chairman of the Committee on Status of Pharmacists in Government Service.

34. *Statement by W. D. Kumler, University of California, entitled "One Easily Plugged Hole in the Dike to Keep Down the Cost per Student in the Health Professions."* This communication is attached to the original copy of these minutes. It deals with the problem of the cost to the state of professional education in those cases where a student completes studies in one health profession only to undertake additional studies in a second health profession. Corollary to this problem as it relates to pharmacy-medicine or pharmacy-dentistry, for example, is the loss of high-quality trained personnel from

the first professional field, in these cases pharmacy.

There was considerable discussion of the clearly recognized problem and the consensus was that it should be given careful consideration by members of the Executive Committee and be placed on the agenda for the August meeting.

35. *Proposed changes in Constitution and By-Laws.* Chairman Parks, Committee on Constitution and By-Laws, provided copies of a *Report to the Executive Committee, January 27, 1954*, entitled "Proposed Changes in Constitution and By-Laws of the AACP." A copy of this Report is attached to the original copy of these minutes.

There was discussion of a number of these changes, many of which involved simply rhetorical matters, and the consensus was that the changes suggested and later to be proposed to the Association via the official channels will result in greater clarity and consistency in the Constitution and By-Laws.

In only one instance was action taken by the Executive Committee; in the case of the last sentence of Article I, Paragraph 13, of the By-Laws. On motion Deno-Daniels, *it was voted* to recommend to the Committee on Constitution and By-Laws that no change be made in the sense of this sentence but that in wording it be changed to conform with other proposed changes in wording; this sentence to be reworded: "Such change shall, upon receiving at a regular annual meeting a two-thirds vote of all member colleges voting on the proposal, be adopted."

36. *Tax exemption on travel expenses of officers and representatives on official Association business.* This recurring problem was discussed, and former Chairman Burt and former Secretary Zopf outlined in some detail earlier unsuccessful attempts on their part to get the Association declared eligible for such exemption. The Secretary stated that it would probably be possible for him to secure advice on this problem from the Legislative Research Center of the University of Michigan. He was instructed to request advice from this source and to report on this matter at the next meeting of the Executive Committee.

37. *Non-expendable equipment.* Policy of the Association has been and is to avoid purchasing non-expendable items for use by the officers, because of frequent change in officers and limited finances. On motion Youngken-Daniels, *it was voted* to make an exception to this policy in the case of purchase of a used typewriter at a cost of \$118.19 for use by the Secretary, and to authorize expenditure of this amount from the contingency fund.

38. *Supply and demand of registered pharmacists.* This matter had been discussed earlier at the joint meeting with the Council in connection with discussion of current enrollment.

Two points of view were expressed concerning the overall status of manpower in pharmacy. It was pointed out that regardless of impressions on the part of some teachers and others, in many states, particularly in the South, store owners say unequivocally there is a serious shortage of registered pharmacists. The opinion was expressed that the large number of recent graduates currently serving in the Armed Forces contributed to the impression voiced, and that actually in total numbers there was no shortage of registered pharmacists; indeed, that we might already be in oversupply.

Since no detailed study of manpower appears to be in the offing, and since the situation varies from state to state, the consensus was that the college representatives to the district meetings should inquire concerning shortages and should include in their reports to be made next August to the Executive Committee their impressions on the situations in the states of the districts visited by them.

39. *Graduate Education in pharmacy.* Reference was made to a report on graduate programs in colleges of pharmacy presented at the joint meeting by the Director of Educational Relations, ACPE. Questions concerning staff, students, and program were raised, and the consensus of the joint meeting was that in many cases we do not have adequate answers to these questions. The concluding statement by the Director of Educational Relations was: "I would like to suggest that the Executive Committee of the AACP, or some other appropriate body, determine whether this is the proper

time to make such a study and, if it is, the method of attack to make such a study definitive and effective."

The consensus of the Executive Committee members was that the questions raised are vital ones and are properly directed at the Executive Committee of the Association. On motion Webster-Parks, *it was voted* to appoint a sub-committee of the Executive Committee to evaluate the questions raised by the Director of Educational Relations, to make whatever preliminary studies appear to the Sub-committee to be feasible within the next few months, and to report their findings and recommendations to the Executive Committee at its next meeting.

The Chairman named a committee of three as this special Sub-committee on Graduate Education: Dr. Parks Chairman, Dr. Webster, and Dr. Youngken.

This interim meeting occupied the morning of January 27, the morning, afternoon and evening of January 28, and the morning of January 29. The afternoon of January 27 was occupied by the joint meeting with the Council. The meeting adjourned at 1:00 p.m., January 29, 1954.

R. A. DENO, *Secretary*

An Additional AACP Resolution*

A resolution presented by the Chairman of the Executive Committee was omitted from the Secretary's Report on Resolutions acted on at the Fifty-fourth Annual Meeting held last August in Salt Lake City. The omitted resolution is as follows:

"Whereas, The experience with the Durham-Humphrey amendment to the Federal Food, Drug and Cosmetic Act clearly indicates that enforcement of this amendment by the methods and procedures now followed by the Federal Food and Drug Administration will definitely curtail the professional prerogatives of the pharmacists of the United States as envisioned in the licensure provisions of our state pharmacy acts; and

"Whereas, The future of the profession of pharmacy depends to a very large extent on the recruitment of personnel from among our young men and women who are selecting professional work on the basis of the service that it gives to the public in matters of health and protection against misuse of drugs; and

*This resolution was unintentionally omitted from the Secretary's Report published in the October 1953 Journal. It has to do with restrictive legislation presented after the report of the Resolutions Committee had been acted on. It is published here at Secretary Deno's request.—Ed.

"Whereas, The training program for the profession of pharmacy is on a level which provides as a finished product men and women with a modern background and understanding of the principles contributory to the health and welfare of our populations; and,

"Whereas, The seventy-four accredited colleges of pharmacy in the United States have adjusted their curricula and developed their facilities to give professional training in line with the principles now accepted by the healing arts as fundamental to adequate professional service in this field; and,

"Whereas, Young people now are being sought out for scientific and professional training in the interests not only of the future health of the people of the United States but also of the standing of our country among the nations of the world; and,

"Whereas, Under the enforcement policies and procedures now being followed by the Food and Drug Administration the people of this country are being denied the pharmaceutical services which they are entitled to receive; and,

"Whereas, Legislation like the Durham-Humphrey Bill and court interpretations of the state pharmacy acts tend to deprive the public of the professional judgment of a class of experts in the field of pharmacy which are now being trained by our educational institutions; and,

"Whereas, This type of legislation imposes undue hardships on the practitioners of pharmacy to the end that they are denied the opportunity to serve the public as fully as their training justifies; and,

"Whereas, The restrictions placed upon the exercise of professional judgment by these laws and regulations removes from the profession of pharmacy the opportunity which young men and women, competent to exercise such judgment, are now seeking when they select the field of work to which they wish to devote their lives and may thus result in the recruitment of a mediocre group of future pharmacists, thereby lowering not only the concept of the services, but also the quality of the health services to be rendered to an ever-increasing health-minded public; now, therefore, be it

"RESOLVED, That the American Association of Colleges of Pharmacy join forces with the American Pharmaceutical Association and such other professional and scientific organizations in the field of health as are like-minded in seeking repeal, modification or revision of the Durham-Humphrey Amendment and sections of the Federal Food, Drug and Cosmetic Act which tend to lower the quality of pharmaceutical service and place undue restrictions upon practitioners of the healing arts without compensatory contributions to health, safety and welfare of the public."

This resolution was approved with directions that it be referred to the House of Delegates of the American Pharmaceutical Association and to the Executive Committee of the American Association of Colleges of Pharmacy for implementation.

The President's Page

PHARMACEUTICAL EDUCATION AT THE CROSSROADS

Any School or College of Pharmacy, whether it be an independent institution, or affiliated with or integrated into a University, has a very definite obligation to society the same as any other educational institution.

In order to fulfill their obligation to society, we will all agree that the main purpose of the Schools and Colleges of Pharmacy are essentially the following:

First—To provide the best professionally trained compounders, dispensers and distributors of the vast variety of therapeutic and other agents used in the prevention and treatment of disease.

Second—To provide active, competent, productive leadership with a capacity to cooperate constructively with the other members of the Health professions. Any plan, project or venture which has for its ultimate goal, the welfare of all mankind has need for vigorous leadership.

Third—To develop in their students integrity, honesty, friendliness and good will and to prepare them for good citizenship in a democratic society where liberty and freedom go hand in hand with law and justice.

Any educational pattern to promote interest and motivation, which are of prime importance in the learning process, and subsequently, the full development of a student, is based on the following principal and constituent elements: Inquiry, Experimentation, Interpretation and Communication.

Inquiry—To excite the imagination of the student and to guide him in his search for information, knowledge and truth.

Experimentation—To enable the student to test some suggested truth or to demonstrate some known fact. It may be the actual living through an event or events.

Interpretation—Here the student is called upon to elucidate, to exemplify or render intelligible the results of his findings.

Communication—To develop in him the ability to convey the information, thoughtfully and skillfully prepared, through the various channels of communication in all walks of life.

Last year the College of Liberal Arts of the University of Pittsburgh appointed a College Self Study Committee to make a survey of its potentialities and opportunities for expanding liberal education among the people of western Pennsylvania. Several sub-committees explored various areas and the Report and Findings of the Committee was published, October 1, 1953.

The aim and purpose of one of the sub-committees was to discover how the college can best serve the cultural needs of the student in the professional and pre-professional programs. The committee reported that it thought every college graduate should have the following:

Skills

The ability to understand and think critically about facts and problems of all chief areas of human knowledge and to think imaginatively and creatively. In addition he should have the ability to use language effectively, to understand the communication of others and to master a selected part of some field of knowledge.

Qualities

Respect for rights, opinions and welfare of others and an adherence to such personal and civic values as integrity, justice and tolerance.

Basic Knowledge

Information dealing with the nature and achievements of man, social human institutions and the methods of science.

These are needed by all men whatever their interests or competences.

Learning and Science are constantly evolving before our eyes. The entire pattern of our society is undergoing a continuous change.

Research in the fields of fissionable energy and radioactive isotopes has expanded the knowledge in this field. Certain of the information so gained is being applied to the field of medicine.

New therapeutic agents are being developed rapidly. Many of these are placed in the hands of the physician for his use after they have been subjected to the necessary laboratory and clinical tests.

The Pharmacist functions as the distributor of therapeutic agents. As part of this important function he must have at hand and be conversant with the information available relative to the same. Thus he must assume more and greater responsibility as a member of the health team. All these factors indicate a real need for additional qualifications on the part of the pharmacist.

Pharmacy has no point of disagreement today that is different from the picture of Pharmaceutical Education in the past. When educational requirements were made more stringent, objections were always raised from one year of high school to four years or when a high school diploma was required for admission.

Considerable opposition was likewise encountered before the three year course in Pharmacy was finally adopted. Surprisingly, however, little objection was voiced when the four year course was proposed and adopted. The granting of a recognized baccalaureate degree met with general approval.

Some of the arguments presented against the proposed changes during that period of advancement in pharmaceutical education are not unlike those being presented today. It was said that the field would suffer; there would not be enough replacements; there would be fewer stores; that help would be too costly, and that prescription service would be priced beyond the means of the clientele.

One needs but to review the numerous articles written and to analyze the results of many surveys to realize that these arguments proved to be fallacies.

The position of the practicing pharmacist has markedly improved in the light of past experiences when the educational standards were raised. There is an increase in both tangible and intangible returns, including financial. There is more time for civic, professional and spiritual activities, and for leisure. Increased prestige in the eyes of the members of all other professions and the lay public has been a result. There is also an increased appreciation of the profession from its own practitioners.

Pharmaceutical Education, the same as any other educational plan, is in the deepest sense a life-long, continuous process which in essence is never completed.

We are adequate as far as professional competency is concerned. But, even so, we are adequate only in the light of pharmaceutical knowledge of today. The pharmacist is an individual who is competent for immediate professional performance. He also has a foundation for advanced professional training. He is not, however, usually equipped with the non-professional skills, interests, insights, and appreciations which are a pre-requisite to a successful career.

We are criticized for developing a curriculum directed chiefly to professional competency. Liberal orientation is prerequisite not only to happy and useful modern living, but also to professional success itself.

We all believe in the best education for the student in pharmacy. We are not divided on that. I cannot conceive of a single individual in the body pharmaceutic who does not recognize that there are some deficiencies in our present plan.

The best pattern of an extended program of pharmaceutical education would be the requirement of a pre-pharmacy course of two (2) years as a prerequisite for a minimum of three years of professional study. This would better prepare a professional, civic-minded, responsible, and purposeful practitioner of pharmacy.

The mere patching up of a curriculum will not meet the changes which are happening so rapidly.

The academic color of Pharmacy is olive green which is the blending of the blue of Philosophy, the yellow of Science and the white of Art. May we develop our educational pattern so that it will truly represent the "Olive Green of Pharmacy."

We must grow in depth—we are not concerned with growing in width.

EDWARD C. REIF

The Editor's Page

We would be negligent of our duty if we did not, in these pages, commend Dr. Robert L. Swain for a recent editorial in *Drug Topics* in which he said, "The comment made by pharmacists, now and then, that they rarely see and seldom use the United States Pharmacopoeia and hence the book has become of little value to them, is discouraging because it indicates a superficial attitude to what is one of the major assets of the pharmaceutical profession." This statement had a running mate, put in the form of a question, when the present century was still young and before a legal standard for medicinal products was born. The question that was frequently asked by pharmacists of students who were contemplating or had begun the study of pharmacy was, "What in the hell are you doing that for?" Both the statement and the question are, by implication, derogatory to pharmacy as a vocation. Between the two, probably the question is the more serious because it strikes at the grass roots of the profession, the hope of pharmacy.

Education is the major asset of pharmacy. Yet it is amazing that there are men today in pharmacy that maintain the status quo is all-sufficient for the education of the pharmacist in an ever-increasing and ever-progressing world. It is just as impossible to improve the educational program without a change of leadership as it is to improve the strain of corn if the original corn plant should never die. Any thoughtful pharmacist must realize that without the United States Pharmacopoeia there would be no legal standard that would protect him and the manufacturer in the production and distribution of medicinals and no guarantee to the public that the product is of value or dangerously toxic.

I am aware that many of the statements that are made that are derogatory to both pharmaceutical education and practice, are made carelessly and with no evil intent, but the implications are there just the same and the one that makes

them does injury to the status of his profession and to his own professional status.

I have a lot of sympathy for pharmacy students who were registered in our colleges in the early years of the century, when the two-year program was the major one. The students themselves could not respect that program when they were associating with students taking courses in everything from agriculture to medicine. And neither did we, who were instructing them. There was no more potent cause for the inferiority complex which possessed the pharmacy student at that time than that two-year program. It was not until 1932 that we began to have a dignified and adequate educational program that would and did increase the respect and the morale of those who took it. And we still have that problem facing us as a member of the health professional team.

The weakest spot in the educational program is the basic requirement for the study of pharmacy. Practicing pharmacists, no more than farmers and doctors, can go to school all their lives. Refresher courses, while helpful, are not the whole answer. The student's formal education must be of such a character as to enable him to train himself from commencement day to the grave.

It is an inspiring sign of the times to observe the attitude of the practicing pharmacist towards the brochure, "Shall I Study Pharmacy?" It is being distributed widely and largely by practicing pharmacists themselves, both individually and collectively by their organizations and in numerous cases at their own expense, in an effort to create a better student body. This voluntary action on their part is one of the unheralded "Strengths of Pharmacy."

The brochure, "Shall I Study Pharmacy?" is the most complete and undoubtedly the most accurate, the best written, the most readable, the most convincing, the most artistically designed and elegantly printed on the finest quality of paper, that has ever been written with the plea of describing the opportunities that pharmacy offers as a career. It is devoid of fanfare, with no exaggeration, presenting the facts as they are. While the brochure was authorized, and

its final form approved by the Executive Committee of the AACP, the actual preparation was in the hands of a Committee on Brochure, of which Dr. R. A. Deno of the University of Michigan was the kingpin, and to him we owe much for the completion of a job well done. Under *Miscellaneous Items of Interest* in this issue will be found a statement as to the preparation of the brochure, its uses and its distribution and where it may be obtained.

At a dinner, which was held in Salt Lake City during the APhA convention in August of last year, a group of former graduate students at the University of Minnesota suggested to Dean Charles H. Rogers that he send out from his office, periodically, a News Letter giving information about those persons who had been graduate students at that University. Dean Rogers began collecting information at once by personal letters and, as is usual with former students, returns were slow. But by late December, thirty-eight students had replied and the Dean sent out his first News Letter.

The letter gives the names and dates when graduate degrees were obtained, the areas of specialization, positions now held, and such other information that is believed to be of interest. Other supplements to the News Letter will be made as information becomes available.

I have found this letter most helpful to an Editor in locating young men who are known to him but of whose background he has no knowledge. I hope other deans will follow with similar news letters. I know there will be opposition from some deans who fear that such publicity will mean that others will be after some members of their staffs. Perhaps so, but it might be a good thing for pharmacy if this fear became a reality and it might even be a good thing for our own individual staff members. Well do I remember an incident that happened when I was still active at the University of Nebraska and Dr. C. S. Boucher occupied the Chancellor's chair. I went into his office bearing a telegram which offered one of my men \$700 a year more than he was being paid, plus an increase in rank. Before I had an opportunity to state my mission Chancellor Boucher broke in with, "I am

always pleased when a dean comes into my office with a yellow paper in his hand for it means some other institution wants our man." When we left the office, the staff member had a one thousand dollar increase in salary plus an increase in rank. That was a good administrative procedure. The idea that we must put our staff members in seclusion is just one more of the short sighted policies we indulge in. We make a great effort to induce capable and well qualified young men to enter the field of pharmaceutical education and then attempt to place their lights under a bushel. A Who's Who in pharmaceutical education would be a boon since it would expose the vast reservoir of talent engaged in this area and by so doing would improve professional relations with the other health sciences and with the public as well.

Dr. George Urdang, as Director of the American Institute of the History of Pharmacy, continues his gracious custom, at Christmas time, of teaching pharmaceutical history by the visual method. Last Christmas he presented to the members of the Institute a reproduction of a picture that was first published in about 1820. It is of a drugstore which was located at Second and Race Streets in Philadelphia. Dr. Urdang states that the picture shows one of the early, possibly even the earliest, American cut-rate drugstore.

The store was owned by an English immigrant, a Mr. T. W. Dyott, who came to this country in 1806 and a year later established himself in Philadelphia as proprietor of a "patent medicine warehouse." In 1810 Mr. Dyott added the M.D. to his name. One might surmise that he did this to increase his prestige or perhaps it might have been done by his friends as a matter of respect or affection, as often happened to druggists of our day.

The dimensions of the store are not given but it appears as if the three-story building with a four-story annex, which was labeled "Drug Warehouse," might have covered the greater part of a quarter of a city block. Piled at the sides of the building are shown great quantities of packaged goods, and standing in the street is a Conestoga wagon, bearing the label "Jacob Slouch, Pittsburgh" and powered by a four-

horse team, apparently ready for the westward run. This might indicate that the establishment might have had a profitable western market, also. The store had a double entry at the corner, which reminds one of a modern Safeway Store or supermarket. Dr. Dyott called his establishment, "Philadelphia Cheap Drug, Medicine, Colour, and Glass Warehouse," and he made the cheapness one of the most significant features of his advertising. In 1904, Martin I. Wilbert, in the *Bulletin of Pharmacy*, wrote, "Dr. Dyott had many of the traits and the accomplishments of the modern business man, and, if he lived at the present time, would probably be able to hold his own with the most advanced and aggressive of the department store variety of drug dealers." Perhaps if Mr. Wilbert could write today he would have also used the word "supermarket."

Dr. Dyott became engaged in a number of business activities and became a victim of the economic collapse of 1837. Charges of fraudulent insolvency were brought against him and in 1839 he was sentenced to three years imprisonment. This does not mean that all modern cut-rate druggists will land in prison, but there is a lesson to be learned from this picture for those who think the cut-rate drugstore is a modern institution and that pharmacy is going to the dogs because of it. The drugstore still exists through centuries of competition and occupies a stronger position in community life and public esteem than ever before. It is our responsibility to develop an aggressive educational program that will keep it so. That can't be done by a *status quo* educational program. As specialization continues to develop in the health sciences the pharmacist must continue to know more about drugs than any other living person. He must continue to render a professional service that is performed by no other group.

Dr. Urdang's method of teaching pharmaceutical history by pictures is a very effective one.

At the annual meeting of the Executive Committee held in Salt Lake City last year, one of the problems discussed was how to direct more students into graduate work in the phar-

maceutical sciences. It ended by the Editor being asked to stimulate the writing of papers on this subject for publication in the *Journal*. As I went about the task, it seemed to me, the best way to get at the answer to this question would be to ask men, who had much experience in graduate work and a large contact with graduate students, what the factors were that caused them and their students to enter the graduate field of study. This was done. In addition the members of the Problems and Plans Committee, who in the main belong to a younger generation, were asked why they undertook study in the graduate field. The response has been generous and the answers have taken the form of letters rather than papers, and they are very much to the point. It has been decided to print these in successive issues of the *Journal*, as space will permit, along with other letters in the section "Gleanings from the Editor's Mail."

Again it becomes a painful task to announce the passing of three of our most distinguished colleagues: Dr. Howard B. Lewis of the University of Michigan; Prof. Ray S. Kelley of the Massachusetts College of Pharmacy; and Dr. Wayland D. Wilcox of Lea and Febiger, medical publishers of Philadelphia. Memorials for these much beloved men, written by those well qualified to do so, appear in the current number of the *Journal*. Also is printed an appreciation of the late Admiral W. H. P. Blandy for the long range constructive contributions he made in the health field in the four years he was president of the Health Information Foundation.

We make no apology for including a memorial to Dr. Wilcox in the list in the *Journal*. In a way, Dr. Wilcox and the late beloved Mr. Leslie W. Rowland of the Lippincott Company, were liaison officers between pharmaceutical education and the book publishing companies. By their associations with us they made us realize that the publishers of texts in our field are a part of our educational system. How could pharmacy progress, or even exist, if there were no means of publication? Once Mr. Ellis Bacon, then Director of the Medical Textbook Division of the Lippincott Company, told me the publisher had no interest in producing a text unless he could

feel that he was making a real contribution to the teaching in the specific area. I happen to know, personally, that many texts have been published at a financial loss to the producer in order that such a contribution might be made. Take for example, the Commonwealth study of the function of the pharmacist, directed by Dr. W. W. Charters. This was the first comprehensive survey of pharmacy, and its needs, that was ever made. It was published under the title, *Basic Material for a Pharmaceutical Curriculum* by the McGraw-Hill Book Company. It was published at a loss to the Company, purely as a missionary effort, and as a contribution to the progress of pharmaceutical education. I doubt if there are many who are aware of this fact. This is a statement about a meritorious service that has been too long delayed.

When one reads the memorial for Dr. Wilcox, he will begin to understand why this gentle, refined, scholarly, and lovable man could make the contributions to historical pharmacy of the Shakespearean and Dickens periods that he presented before the Historical Section of the APhA in Philadelphia and in Salt Lake City. We hope, when space permits, to publish these manuscripts of his latest efforts in the pages of *Journal*.

These three men will be missed at our annual meetings but their memory will be an inspiration to carry on, and again we take comfort in the promises of Easter.

RUFUS A. LYMAN

Notice! Journals Wanted!

Information is desired on the availability and prices for the following volumes of the **JOURNAL OF PHARMACOLOGY AND EXPERIMENTAL THERAPEUTICS**:

Vol. 1-26 (Incl.)	Vol. 62, 63
30-44 (Incl.)	65-73 (Incl.)
49	75
54-60 (Incl.)	78-88 (Incl.)

Please address information to College of Pharmacy,
University of Arizona, Tucson, Arizona.

Gleanings from the Editor's Mail

Dear Editor:

I am sending this note to make record of my appreciation of the receipt of the *American Journal of Pharmaceutical Education*. While at present I am absorbed in the task of serving as Education Advisor for the Ordnance Training Command, I find that I continue to be infected by Pharmacy.

The October number of the *Journal* has been examined with mounting interest. I continue to wonder at your industry and success in promoting the interest of the *Journal*.

Purdue University
January 12, 1954

Edward C. Elliott

Dear Editor:

I have just finished reading the October 1953 issue of the *Journal* from cover to cover. As usual, it is packed with vital and stimulating material. It is always a source of satisfaction to know that the Foundation has a small part in making this essential publication available.

American Foundation for
Pharmaceutical Education
Washington, D. C.
January 14, 1954

W. Paul Briggs
Secretary and
Executive Director

Dear Editor:

You and I are in complete agreement regarding the "Notes and News" section of the *Journal*. I'll bet that the majority of your readers do as I do, turn to the back and read of the doings of their friends or acquaintances in pharmaceutical education, and then turn to the front and select the most pertinent articles for study. By all means the news section is very important. Too often trade journals, and even other professional journals glance at news releases from schools of pharmacy, see nothing that would interest retailers or manufacturers, and toss the release into the discard. We need a section such as this where we can be informed of what others have done, or are about to do.

University of Pittsburgh
February 7, 1954

William L. Blockstein

Dear Editor:

I agree with you that a "Who's Who in Pharmacy" would be a very desirable publication providing that the cost would not make it necessary for you to exceed your budget. The thought has occurred to me for you to include such a "Who's Who in Pharmacy" as an addenda to the *American Journal of Pharmaceutical Education*. Even though conditions change rapidly from year to year, I think I would put such a volume alongside of my "Who's Who in America" and also the "American Men of Science." It is almost impossible for an administra-

tive officer who has not been doing much traveling in the past few years to keep track of the young men entering the teaching profession or even those who have gone into industry. I am quite sure it would be a valuable aid in advancing young men in pharmaceutical education and industry.

University of Minnesota
January 26, 1954

Charles H. Rogers
Dean College of Pharmacy

Dear Editor:

As I have repeatedly written you, I greatly appreciate receiving regularly the *American Journal of Pharmaceutical Education*. The various numbers are read very carefully by me immediately after receipt.

The October 1953 issue, which has just come, is very impressive for it gives a comprehensive review of what took place at what I had been informed by my colleagues here was a most successful meeting at Salt Lake City. I had been told that at the opening meeting on Sunday evening, in the Mormon Tabernacle, you gave the invocation which made a very profound impression upon all those who heard it. I am pleased to note, as indicated by you on page 707, that not only my colleagues here at the University of Michigan but that many of those in attendance requested you to print it, which I am delighted that you have done. Both Mrs. Kraus and I have read it, and we too were greatly impressed. Heartiest congratulations.

I also want to congratulate you on the next paragraph on pages 708 and 709, where you complain rightly that off-color stories have no place whatever in scientific gatherings. It is sincerely to be regretted that some participating in the programs do not sense that all discussions should be on a very high level. The legend you propose, "Keep the profession of Pharmacy clean," is a very good one, but let me add it should also apply to all other professions.

Mineralogical Laboratory
University of Michigan
January 8, 1954

Edward H. Kraus

Dear Editor:

I have just received the October 1953 number of the *American Journal of Pharmaceutical Education* and in it I came across the statement made by Dr. Arthur E. James about Pharmaceutical Education in the Republic of Lebanon. Dr. James stated on p. 615 that:

"For a number of years the American University of Beirut, in the Republic of Lebanon, has operated a pharmacy school under the jurisdiction of the Medical Faculty. In 1952 this University graduated its first class which had completed a four year curriculum and received the Bachelor of Science Degree in Pharmacy. Prior to this a three year course led to the pharmaceutical chemist degree. The work of this institution is accredited by the University of the State of New York. In 1952 the total enrollment in the pharmacy courses was sixty-five."

The third sentence of the above quotation needs correction and explanation. It is true that up till June 1952 we granted the Pharmaceutical Chemist Degree. However, our four-year curriculum was begun in 1932, and by special permission from the Board of Regents of the State of New York where the University is incorporated, we continued granting the Pharmaceutical Chemist degree to graduates of the four-year program in order to keep the terminology in line with the then accepted British and French usage in this part of the world. The first class to graduate from the four-year curriculum with the Ph.C. degree was in 1937. In June 1942 the Ph.C. degree was discontinued and we started awarding the Bachelor of Science in Pharmacy degree.

You may be interested to know that the minimum requirement for admission to the first year of our four-year pharmacy curriculum is the completion of the Freshman science program of the School of Arts and Sciences of this University, or an equivalent program. Accordingly, the University of the State of New York accredits our curriculum as a five-year course.

I shall be very grateful if you will kindly make a correction of Dr. James statement in your next issue of the Journal. I am enclosing a copy of my detailed report on our School of Pharmacy which was published in the 1953 number of the School's year-book "The Apothecary."

I am a constant reader of your journal and I am very glad to inform you that through it I am able to keep abreast with the developments of pharmaceutical education in the United States. If you think you need more information about pharmaceutical education in Lebanon, Syria and Iraq please let me know. I shall be glad to prepare for you a detailed report.

American University of Beirut
Beirut, Lebanese Republic
March 9, 1954

Amin F. Haddad, Director
School of Pharmacy

(Note: The letters which follow are concerned with the question—"How to direct more qualified students into graduate work in the pharmaceutical sciences?")

Dear Editor:

Problems of ways and means of "directing" more qualified graduates into graduate work are coextensive with problems of ways and means of enticing more qualified graduates into graduate work and of guaranteeing their acceptance by pharmacy faculties. Your choice of problems for deliberation by the Committee on Problems and Plans could not be more appropriate or of greater importance.

I am gravely concerned with the attitude that chemists who are engaged in the production of drugs in a number of capacities are, in spite of this very obvious fact, not considered to be practicing pharmacy and are not integrated with the other specialists whose combined efforts make available from animal, vegetable and mineral sources and

chemicals, materials in form suitable for use as drugs. It is most unfortunate that this attitude is initiated, sustained and promulgated by educators who deny their facilities for higher education in the pharmacy sciences such as pharmaceutical chemistry, to persons who have not been trained primarily to practice pharmaceutical technology—dispensing on prescription, etc. Suppose that only auto salesmen were permitted to design and manufacture cars! I do not mean to disparage the efforts of our pharmacy clinicians who certainly are the bread and butter of our profession. On the other hand, by our jealous exclusion of all thought not strictly pharmaceutical, are we not building for ourselves a whited sepulchre? The manufacturer who claims that he would rather hire and train a chemist in the disciplines of pharmaceutical technology than hire a pharmacist trained in chemistry is probably justified on the basis that our schools have stifled scholarly pursuits by chemists and with great zeal rejected many individuals best qualified for higher learning because they had the bad taste to attend a liberal arts college. He probably holds this view to some degree because he or his key employees were so rejected or at least not sought by colleges of pharmacy as suitable subjects for graduate instruction, and there provided with the opportunity of higher learning. The non-pharmacists in manufacturing today have ironically become in a very real sense the employer of the bulk of our professional personnel—at least the majority of pharmacists are working for such non-pharmacists out of consideration of a retailer's mark-up. It behooves the educator to appraise this situation objectively, realistically and with foresight, and to lay his plans accordingly.

If you feel that it is warranted, I shall endeavor to present an affirmative view on the problem of accepting into our graduate programs persons who do not hold a B.S. from a college of pharmacy.

January 18, 1954

Geo. P. Hager
School of Pharmacy
University of Maryland

Dear Editor:

The question of what leads one to graduate study is one which might be expected to cause a great variety of replies. From my experience here, on a very brief survey, and interviews of approximately 100 members of our University Staff, resulted in almost 100 different answers. From one, "Because my parents insisted that I continue my study." Another, "A desire for great financial gains and rank on a University Staff." So many, approximately two-thirds, stated that their continuation towards graduate study was due largely to the influences and stimulation exerted by their ideal teachers.

This was a bit fascinating, so I attempted to find out just at what level were these teachers to be found, and to my surprise most of these teachers were found in the Elementary and High Schools, and a very few were to be found at a college level.

If I might refer to myself, the thing that led me to graduate study was a talk made by Dr. E. C. Elliott, in 1946 I believe, when he visited the University of Southern California. His talk proved to be very stimulating and challenging. As a result of hearing him I made my decision.

I have made survey of the Staff of the School of Pharmacy here and the following replies are the most represented by the group: To gain a great degree of proficiency, knowledge and competency in the Pharmaceutical field. To advance their knowledge in the various fields of pharmacy, science and education in order to carry on research and teach.

Texas Southern University
February 13, 1954

Hurd H. Jones, Jr.
Dean School of Pharmacy

Dear Editor:

With respect to your problem concerning the encouragement of students to enter the graduate program, I hope that the following statements might be of some help.

As we are no doubt agreed there is no simple formula which will assure continued interest in graduate work. Our efforts must be constituted rather by a combination of a number of actions.

I have spoken with students about this problem and at times have presented them with questionnaires in order to determine how interest in graduate work might be stimulated. The following generalizations and conclusions might have some validity. (They are not given in any order of importance). First, the students often are not properly informed during their undergraduate days with respect to what constitutes a graduate curriculum or what benefits are to be realized by entering the program. Accordingly, I speak to the seniors each year at the end of the first semester regarding their opportunities and responsibilities upon graduation. In this talk (usually 2 one hour lectures) we discuss the opportunities in retail, hospital, manufacturing, research, teaching, and government service. I give them an idea of the type of work involved, the approximate wage scale, opportunities for advancement, education and experience desired, etc. I outline representative graduate programs, discuss credit hours, thesis work, grants and assistantships, and the special types of graduate work available in various schools; e.g., the hospital program at Jefferson Medical School in Philadelphia in cooperation with Philadelphia College of Pharmacy and the similar plan at University of Michigan and other schools; the physical pharmacy and history of pharmacy programs at Madison, Wisconsin; the radioactive work at Purdue; the manufacturing course in cooperation with industry at our own school, and other special areas in which the students indicate an interest.

Second, I find that many of the students have tired of school after four years and are anxious to get out into the business and professional world. Some of these would like to return to graduate work after several years but may be obliged to work to support a family, or

simply because they do not see sufficient reason to sacrifice additional years unless they have the assurance of a better life as a result of it. Here again we teachers might do something. Former students who show an interest in returning for graduate work should be encouraged to do so by way of sound arguments in favor of advanced education. Of course the most serious consideration in these cases is the provision of adequate funds for subsistence of the student and his family during his years of graduate study. A man, wife, and child can just subsist on \$2500-\$3000 a year, at least half of which, I feel, should be provided by the school, the remainder by outside work by the student. These more matured persons who have worked in retail pharmacy or industry for several years and who have certain family responsibilities, usually make excellent graduate students since they know what they want and appreciate the opportunity to return for further training. Industrial firms frequently encourage these people to return to school; possibly they could do still more if approached by the educator. I think that the AACP should review its stand again with regard to evening classes in graduate pharmacy; a large number of people in industry, particularly in the Philadelphia area, have expressed a desire to return for advanced pharmacy education, but are unable to do so during the working day. I, for one, do not look forward with favor to teaching evening classes, but I would do so if it gave opportunities to a number of people who could not otherwise realize them. The University of Pennsylvania and Temple University, Drexel Institute, and other fine schools in this area offer late afternoon, evening, and Saturday classes in chemistry and engineering for the benefit of these industrial people. In summing up this second point, I feel that many students, tired of school at the end of the rigorous scientific curriculum, and not knowing too well what their objectives are, elect to enter business and professional jobs in preference to continued schooling. Some of these, after several years, find the need or are otherwise motivated to return for graduate work. In every way possible within practical limits, their employers and the schools should encourage them to do so, and should try to make it a pleasant challenge for the prospective "returnee" rather than an impossible hardship. Along these lines I would welcome articles in your Journal discussing the ways and means of approaching industry, the government, etc., to obtain grants in aid for these people. We educators would welcome such articles.

Third, (and this ties in rather closely with point One) we have found at Temple that we can instill the desire in the undergraduate student for graduate work by offering him participation in a research course or project in his senior year, and even offer him credit for certain lower level graduate courses so that he has a "running start" if he desires to continue in graduate work. Through this plan, which is not unique or original with us by any means, the student gets an insight into the "mysteries" of graduate work before he actually commits himself and thus determines from this preview whether or

not he would like to continue. The association of the seniors with the graduate students in such courses is also helpful and tends to make the "cross-over" from undergraduate status less abrupt.

Finally, I might suggest encouragement of lower classmen by the teacher to consider graduate study through the discussion of research projects during lecture presentation, project work to a limited extent in the laboratory, and consultation with high ranking students who show an interest in advanced education.

As I tried to say at the beginning of this letter, there is no magic potion which will inspire good students to enter a graduate school. Instead, it is the result, in part, of hard work and encouragement by the teachers and employers, and the desire of well informed students who are motivated to make the sacrifice so that they may go on to higher purposes and a better life.

Temple University
February 6, 1954

Alfred N. Martin
Associate Professor of Pharmacy

Rho Chi Elects

Prof. Milton L. Neuroth, professor of pharmacy at the School of Pharmacy of the Medical College of Virginia has been elected national president of the Society and will be installed at the annual meeting in Boston in August 1954. Other officers of the Society are Dr. Paul J. Jannke, of the University of Connecticut, president; Dr. Lloyd M. Parks, University of Wisconsin, secretary-treasurer; and Dean Roy A. Bowers, Rutgers University, vice-president. Members of the Executive Council are Dr. Donald C. Brodie, University of California; Dr. John E. Christian, Purdue University; Dr. Maynard W. Quimby, Massachusetts College of Pharmacy; and Dr. Allen I. White, State College of Washington.

Rho Chi, the national pharmaceutical honorary society was founded in 1922. It now has 43 active local chapters in the schools of pharmacy in the United States with a total membership of approximately 6500 active, honorary and alumni members. Active membership is limited to those undergraduate and graduate students who have completed at least 60 per cent of the work toward their degree in the pharmaceutical sciences and who are in the highest 20 per cent of their respective classes.

Notes and News

University of Arizona.—The Student Branch gave a testimonial dinner on February 19th in honor of Newell Stewart, president-elect of the APhA. The speakers for the occasion were Dr. Melvin W. Green and Dean Troy C. Daniels who with Mr. Charles Nielsen composed the accreditation team making a visit to the University at that time.— The Arizona Society of Hospital Pharmacists, at a meeting held recently at the College, began a survey and study of the printed forms used in hospital pharmacies throughout the United States. For this project members are collecting as many samples of forms as they can obtain from all hospitals.— Dr. Ernest Anderson, professor emeritus of chemistry, died on February 19, 1954 at the age of 73. Dr. Anderson was on the University faculty from 1923 until he retired July 1, 1953. He was born at Kaufman, Texas, and attended Trinity College. He received the master's degree from the University of Texas and the doctorate from the University of Chicago. Before going to Arizona he taught at the Massachusetts Agricultural College, the University of South Africa in Pretoria, and the University of Nebraska. He won national recognition for his researches in the field of the carbohydrates. He was connected in a research capacity with the Carnegie Institute, the University of Wisconsin and the Institute of Paper Chemistry at Appleton, Wisconsin. For several years he had a Carnegie Foundation grant for wood pulp study. He helped to establish chapters of Phi Beta Kappa and Sigma Xi on the Arizona campus and in 1950 was made a honorary member of the Phi Lambda Upsilon, national honorary chemical society. When the College of Pharmacy was established in the University he supported it in every possible way. After thirty years he is remembered by old Nebraskans as the most brilliant and most beloved teacher of their day. He leaves his wife, Lillian, two sons, Ernest and Frank, and three granddaughters, all of Phoenix.

Alabama Polytechnic Institute.—Dean L. S. Blake and Prof. G. W. Hargreaves attended the meeting of District No. 3, Boards and Colleges, at Mobile, Alabama, March 15-16. Four students have recently been initiated into Rho Chi, and one into Phi Kappa Phi.— The Student Branch has conducted a membership drive and now has a total of 140 members.— Prof. B. O. Shiflett, who was formerly in charge of dispensing, has resigned to enter the field of retail pharmacy and his work has been taken over by Prof. J. M. Rash. Norman H. Franke has been appointed as assistant professor of pharmacy. Mr. Franke holds the bachelor's degree in pharmacy from Temple University and has completed course requirements for the doctorate with the history of pharmacy as a major under Dr. George Urdang at the University of Wisconsin. He held a Fellowship from the American Foundation for Phar-

maceutical Education.— Graduate instruction is now being offered in the fields of pharmacy, pharmaceutical chemistry, pharmacology, and pharmacognosy.— A special appropriation of \$5,000 has been received to purchase additional equipment for graduate work.— James K. Guin, a senior, is in charge of the pharmacy exhibits for the "Village Fair", the institutional open house for high school seniors to be held April 9-10.— Chi chapter of Phi Delta Chi, which was reactivated the past year, now has an active membership of 35. The chapter is actively engaged in promoting a Student Branch of the APhA as well as the general morale of the student body.— The senior and junior students visited the Upjohn Company and the Lilly Laboratories March 27-April 3.

Butler University.—The names of three pharmacy seniors, William Fleming, Donald Franz, and Carolyn McClurg, have been selected to appear in *Who's Who in American Colleges and Universities*.— Sherman Reeves, a pharmacy sophomore, has been elected president of the University's sophomore class. Dean Karl L. Kaufman attended the APhA Interprofessional Conference in Washington in February.— Dean Emeritus Niles is making satisfactory progress toward recovery from a fractured hip resulting from a fall in his home.— Butler University Sigma Xi Club is holding its meetings in the pharmacy building.— On February 20, Dean Kaufman addressed the Indiana Chapter of the American Society of Hospital Pharmacists on the subject, "Ethics of the Hospital Pharmacist". The new brochure, "Shall I Study Pharmacy?" has been placed in the hands of counsellors in all of the high schools in Indiana, in the sectional drug clubs, and in the wholesale houses. This idea was initiated by the pharmacy college's new Advisory Council and carried out through the generous support of the drug wholesalers and the Indiana Pharmaceutical Association. The Pharmacy College is designing and building an exhibit to show the relationship of pharmacy to public health which will be shown at the First Indianapolis Health Fair. The College will also be responsible for selecting the high school exhibits from the Regional Indiana Science Fair to be shown later at the Health Fair. Dean Kaufman is a member of the steering committee in charge of the Health Fair.— The graduate student enrollment has increased to 15 for the second semester of 1953-54.—Dr. R. B. Mull is planning to offer a new course in Drug Marketing for the pharmacy students. He will continue to give his course in Store Management.— Mr. R. C. Clark of the Eli Lilly Company addressed the students, recently, on the topic "Pick Carefully Your Own Ruts, for You May Be in Them for a Long Time".— Plans have been completed for the "Seminar on Modern Pharmacy" to be held on the University campus May 11 and 12. Dr. Harwood is chairman of the Committee on Arrangements.

University of California.—New additions to the staff, 1953-54, are Dr. Eugene C. Jorgensen, instructor in chemistry, Dr. Kwan Hua Lee, assistant professor of pharmaceutical chemistry, Dr. Alex Shrift, in-

structor in pharmacognosy and plant physiology and Mr. John E. Preston, instructor in pharmacy.— On February 28th, Dean T. C. Daniels and Drs. Brodie, Goyan, Riegelman and Schwarz presented a one day seminar before members of the Tri-County Pharmaceutical Association at Monterey, California. The program was devoted to discussions of ophthalmic solutions, ointment vehicles, suspending and emulsifying agents, pharmaceutical education and restrictive legislation.— The \$20,000,000 building program on the Medical Center campus of the University is drawing to completion. Increment I of the Medical Sciences Building will be ready for occupancy by early summer. The College of Pharmacy will occupy floors 8, 9, 10 and 11 of the Medical Sciences Building. The Herbert C. Moffett teaching hospital with a capacity of 483 beds will be available for occupancy about December 1, 1954. Some \$250,000 was appropriated to the College of Pharmacy to equip the teaching and research laboratories of the College.—Dr. John F. Oneto, professor of pharmaceutical chemistry and pharmacy, is currently on sabbatical leave.—Dr. Louis Mapspeis, who completed the Ph.D. degree in the summer of 1953, is now assistant professor of pharmaceutical chemistry at Columbia University.— Mr. Alain Huitric plans to complete the requirements for the Ph.D. degree in pharmaceutical chemistry in June.

Columbia University.—In memory of the late Alexander Block, founder and president of the Block Drug Company, the employees of the company have created a fund to be given to the Columbia University College of Pharmacy. The income of the fund will be given annually to a sophomore.— The College was host recently to the New York Branch of the APhA. The speakers on the occasion were Dr. Lloyd C. Miller, director of revision of the United States Pharmacopoeia and President F. Royce Franzoni of the APhA. Dr. Miller presented the topic, "The New Pharmacopoeia". He stated that the U.S.P. XV would appear in July, 1955 and would contain 860 monographs representing 431 drugs with about 200 new admissions including five new antibiotics and 11 new antihistaminics. President Franzoni presented the topic, "A National Board Examination for Pharmacy" and discussed several points germane to a licensing examination by such a board.— Dr. Roy Kuramoto, who received the bachelor's degree in pharmacy from the University of Utah and the master's and doctorate from the University of Wisconsin, has been appointed as assistant professor of pharmacy.—Jerome Reinstein, who received the bachelor's degree from Columbia in June, 1953 and who stood first in rank in his graduating class and who was the recipient of the Borden Scholarship Award, the Louis Dohme Prize, the Alumni Gold Medal, the Max J. Breitenbach Prize, the Dieckman Prize and the Kappa Psi medal, is now registered for graduate work at the University of Wisconsin. Jerome's father, John Reinstein, was supervisor for the day for the post office which was set up on the campus in January for the ceremonies of the First Day of Issue of the University's Bi-

centennial Commemorative Stamp.— To emphasize the various opportunities offered by pharmacy as a profession, six speakers, authorities in their respective fields, addressed the seniors of Columbia University College of Pharmacy during February and early March. They, together with their subjects, were: Walter Biggs, district manager of the New York sales division of E. R. Squibb and Sons, "Medical Detailing"; Paul C. Wieseman, chief pharmacist of the Norwich Pharmaceutical company, "Pharmaceutical Control"; Robert Bogash, chief pharmacist at the Lenox Hill hospital, "Hospital Pharmacy"; Dr. Robert L. Swain, president of the American Foundation for Pharmaceutical Education, "Graduate Education and the American Foundation for Pharmaceutical Education"; Irving Rubin, managing editor, American Drug-gist, "Pharmaceutical Journalism"; and Dr. Rudolph Blythe, director of pharmaceutical research at Smith, Kline and French laboratories, "Pharmaceutical Research".— Five freshmen, three sophomores, two juniors, and two seniors made the honor list for scholastic achievement for the winter session just ended.— In addition to the routine work in the library, Eleanor Kerker, retired registrar, has been working on the project of converting the library from the Sheppard to the Dewey Decimal system. This is a tremendous undertaking and has covered the span of nearly four years. It was started in November, 1950 and she expects to complete the work before or by November of this year. She was formerly a member of the staff of the Registrar as assistant to Walter B. Simpson, then Registrar. When he retired in 1941, she was appointed to that position which she held until she retired in 1948. Two years later she was brought back to undertake the project of conversion.

University of Colorado.—The College held a convocation in connection with the Religion in Life Week on the campus, at which Dr. William G. Pollard, executive director of the Oak Ridge Institute of Nuclear Studies, was the guest speaker. Dr. Pollard is a world famous nuclear physicist, and also an ordained deacon in the Episcopal Church. The theme of his address was the history of religion and its influence on the lives of all men.— All faculty members attended the Third Rocky Mountain Drug Conference held in Denver on February 13-14. All members of state boards, representatives of state pharmaceutical associations and colleges of pharmacy from the entire Rocky Mountain Region were in attendance.—Mr. Martin E. Hamner, B.S. and M.S. degrees from the University of Colorado, and who for the last several years has been teaching and taking graduate work at the University of Florida, has been appointed as instructor in pharmacy for the spring semester.— Dr. John W. Shell, who was a teaching fellow while completing his doctorate which he received in January, has accepted a position with the research department of the Upjohn Company at Kalamazoo, Michigan.— Dean Charles F. Poe and Mr. Mont H. Guthe, instructor in pharmacy administration, attended a recent monthly meeting of the Weld County Pharmacal Association in Greeley.

Mr. Guthe, who holds a Teaching Fellowship in Pharmacy Administration from the American Foundation for Pharmaceutical Education, addressed the Association on the subject, "Merchandising in Your Drug Store".— At a recent meeting of the Student Branch, Mr. Hans Landay gave a discussion and demonstration on the art of glass blowing. Mr. Landay operates his own laboratory in Boulder and is well known throughout the United States for his expert work of making anything in the way of scientific glass equipment.

University of Connecticut.—Henry Eisen has been appointed as instructor at St. Johns University in Brooklyn. He will continue his graduate work there so as to receive the doctorate in June at the University of Connecticut.— A new undergraduate scholarship has been established to be known as the Alpha Zeta Omega Women's Auxiliary Scholarship. Robert DiCenzo has accepted the graduate assistantship in the drug analysis and dispensing courses which was recently vacated by Arnold Urdang.— The Mortar and Pestle Honor Society sponsored the annual freshman social in March which is held to allow the freshmen to meet the pharmacy staff on an informal basis.— A panel discussion of the curriculum was the main feature of the March meeting of the Student Branch.— At the national convention of Kappa Psi held in Washington, Prof. Nicholas Fenney, formerly Grand Historian, was elevated to the office of Grand Regent, and Prof. Walter R. Williams was elected Grand Historian.

Drake University.—Prof. J. Earl Galloway is recuperating in the Iowa Methodist Hospital from an illness which will keep him from the campus for the remainder of the academic year.— Arnold D. Marcus, associate professor of pharmaceutical chemistry, has returned after a year's leave at the University of Wisconsin where he completed work for the doctorate in physical pharmacy.— Herbert E. Rise, who was associated with the College for seven years, has resigned to accept a position as pharmacist with the newly formed Medical Arts Pharmacy in Des Moines.

University of Florida.—In February the Ph.D. degree was awarded to William Delman Easterly, Jr. He has gone to the University of Mississippi as assistant professor of pharmacy.— Dr. J. Hillis Miller, who has been president of the University for the past six years, died of a rheumatic heart condition at the age of 54.— Dr. W. J. Husa received a shoulder injury on February 22 when struck by a slow moving car on the campus. He is recovering rapidly.

Fordham University.—At the annual faculty convocation, Rev. Laurence J. McGinley, S.J., president of the University, awarded the Bene Merenti Medal to Dean James H. Kidder. Oil portraits of the late Dean Jacob Diner and Prof. William J. Bonisteel were presented to the College by Alpha Zeta Omega and the class of 1928, respectively.— Mr. Thomas R. Geisinger of Batten, Barton, Durstone, and Osborne made the premiere presentation of a four year study, "The Pharmacist", before the alumni association. The talk was supplemented

with slides.— A special series of lectures for the alumni were given by members of the faculty during February and March. The topics of the guest speakers included: Pharmacy's Challenging Problems by Dr. Frederick Lascoff; Institutional Advertising in the Pharmacy by David Vran; The Problem of Smoking and Lung Cancer by Dr. E. L. Wynder; and Problems of Drug Store Operation and Merchandising in the Present Market by Mr. Leo Butsch, president of the Whelan Drug Company.— Messrs. Daniel Deodati and Nicholas Gesoalde, president and executive secretary, respectively, of the New York State Pharmaceutical Association, addressed the senior class recently on the importance of the Association to the welfare of pharmacy and the public.— Recently, the junior class visited the Merck Laboratories and the seniors, the laboratories of the Charles Pfizer Company, Hoffman-LaRoche, and Lederle.— During the Easter vacation, 82 members of the junior and senior classes toured the plants of Eli Lilly and Company, Parke, Davis and Company and the Abbott Laboratories.— The New York Branch of the APhA, on April 12 at the College, heard Dr. E. L. Wynder, research director Medical Center on Cancer and Allied Diseases, speak on the topic, "The Experimental Production of Cancer with Tobacco".

University of Georgia.—Clyde W. Whitworth has been appointed as an instructor in pharmacy. He is a graduate of 1950 who has been in retail pharmacy for three years. He is also pursuing work towards an advanced degree.—Staff members took part, in February, in a panel discussion on the "Uses and Abuses of Drugs" which was sponsored by the Clarke-Oconee-Madison Medical Association.—The Georgia Pharmaceutical Association entertained the pharmacy students at the regular annual student dinner in February. Mr. Wm. Lee, president of the Association, was the speaker.—Prof. Joseph LaRocca has recently been elected to membership in Phi Kappa Phi, and Dean Kenneth Waters, to Gridiron honor society.

Howard College, Birmingham.—Ten students completed requirements for the B.S. in Pharm. in January.— A course in pharmaceutical orientation designed to stimulate and hold the interest of pharmacy freshmen has been added to the curriculum. It is being taught by the pharmacy faculty and features talks by successful men in the various fields of pharmacy.— Dr. J. T. Bryan spoke recently to a group of resident dermatologists at a local hospital on the subject, "The Pharmacy of Local Applications."— The Women's Auxiliary of the Alabama Pharmaceutical Association has established an emergency loan fund to aid senior women in pharmacy.— Mr. Herbert Schwartz, who obtained the bachelor's degree from the State University of Iowa, the master's from the University of California, Los Angeles, and has pursued, for the past two years, graduate work toward the doctorate in pharmacology at the University of Alabama, joined the faculty in January.— The Division of Pharmacy is in the process of editing a News Letter to be sent to alumni in order to keep them informed of the

progress being made in pharmaceutical education and research, particularly at Howard College.

Howard University.—Kenneth Scott, a sophomore, was the recipient of the Chemistry Achievement Award, a copy of the Handbook of Chemistry and Physics, which is sponsored by the Chemical Rubber Company of Cleveland, Ohio. This award is presented annually to the student with the highest grade in the course in inorganic pharmaceutical chemistry. It was presented by Dr. Nathan Levin, professor of pharmaceutical chemistry at the February meeting of the Student Branch. The speaker on the occasion was Mr. Paul C. Wieseman, chief pharmacist of the Norwich Pharmacal Company. His subject was "Research in Pharmaceutical Preparations."— Drs. Roy C. Darlington and Phillip V. Hammond attended the interprofessional conference held in Washington on February 4.

Idaho State College.—Prof. Ivan Rowland and Dr. C. C. Riesdesel have presented programs the past semester to the following groups: the Annual Old Timer's Pharmacy Dinner at Twin Falls; the Rotary sponsored Farmer's Night at Buhl and the Annual Farmer's Night sponsored by the Lion's Club at Hazelton.— Dr. Riesdesel is giving a series of refresher sessions for the pharmacists in the southeastern section of Idaho. Prof. Rowland, Dr. N. Marie Huntington, and Dean E. E. Roscoe will appear in the same series.— The Student Branch sponsored a lecture, on March 26, by Dr. David Stiles, market director for the Abbott Laboratories, for the benefit of the students and the local pharmacists.— Prof. Rowland presented a lecture on antibiotics before the Idaho Dental Association at Pocatello on March 6.— The Alpha Zeta Chapter of Phi Delta Chi is giving a luncheon monthly in honor of the professional men in the Pocatello area of the state. Local doctors, dentists, optometrists, medical retail representatives, faculty members, pharmacists, and the fraternity members are included in the sessions.— Richard P. Strand, a senior pharmacy student, has been awarded a \$200 scholarship by the local Elks Club.

University of Illinois—The Professional Colleges.—The construction work on the new classroom and laboratory building, originally planned to be completed by June 15, has been delayed by the city-wide plumbers' strike. Now that they have returned to work it is hoped the building will be completed by late September.— Pharmaceutical and chemical firms awarded twenty-nine grants totaling \$95,330 to the College of Medicine during the past twelve months in support of research and educational programs.— Oscar Hodel of Rockford, a 1922 alumnus, has been appointed a member of the Advisory Committee to the College of Pharmacy by the University Board of Trustees. He will serve until June 30, 1957.— Associate membership in the Illinois Pharmaceutical Association for 1954 has been given to all members of the senior class by the Association.— Approximately 12,000 persons, staffs, students and nurses, form the personnel of the Medical Center District. The College of Pharmacy contributes about

400 students and 60 staff members to this group. About 5,600 hospital beds and 425,000 outpatient visits per year give an indication of the medical importance of this area.— The junior class visited the Eli Lilly plant on March 7-9. On March 1, the members of the senior class were the guests of the Walgreen Company. A tour was made of the administrative offices, a large down town store, and a self-service store.— Dr. G. A. Bennett, head of the department of pathology became dean of the College of Medicine on April 1.

The State University of Iowa.—The College of Pharmacy, in conjunction with the Office of the Registrar, compiled a new brochure on Pharmacy. The brochure is directed to high school students. It briefly describes the various fields of pharmacy and the opportunities; it gives a resume of the educational requirements, the procedure for admission into the University, the estimated cost per school year, the financial aid available, and the extracurricular activities into which the student may enter.— Deans Emeritus Wilber J. Teeters and R. A. Kuever were each presented with an "Award of Merit for Outstanding Service and Leadership" in Pharmacy at the annual convention of the Iowa Pharmaceutical Association which terminated on March 2.— Wendle L. Kerr, Instructor and Station Pharmacist, was interviewed on WOI-TV, Ames, Iowa, on March 8. The interview was on the educational requirements, fields and opportunities in pharmacy. The program was one of a series of ten on Choosing a Career which was sponsored by WOI-TV and directed to high school students. It was estimated that 4800 students were within the range of reception.— Several faculty members and wives attended the annual convention of the Iowa Pharmaceutical Association which was held in Des Moines on February 28 and March 1 and 2.— Plans are in progress for remodeling certain areas of the pharmacy and chemistry areas to provide for a modern prescription laboratory, a student research laboratory, an air conditioned room for the manufacture and packaging of sterile products and two new offices.— Six senior, two junior and two graduate students have been elected to membership in Delta Chapter of Rho Chi.

Massachusetts College of Pharmacy.—Prof. Howard L. Reed, Chairman of the 125th Anniversary Laboratory and Equipment Fund has announced that the Fund campaign has accomplished its goal of raising \$125,000. This sum has been collected from alumni and friends of the College for the improvement of its physical facilities.— Professor John W. Schermerhorn recently completed a refresher course at Tracerlab in the latest developments in the use of radioisotopes.— The new lighting in George Robert White Hall, described in a previous issue of this Journal, was the subject of a feature article in the January number of New England Electrical News.— The College Herbarium has been augmented by the woody plants collection of Dr. John G. Jack, formerly of the Arnold Arboretum. The entire Herbarium collection is now undergoing a renovation which includes reclassifying,

remounting, and relabelling.— Among the major pieces of equipment recently acquired by the College is a Hardy-Wolff-Goodell Dolorimeter.

University of Kansas.—Dean J. Allen Reese attended the meeting of District No. 6, Board of Colleges, recently held in Oklahoma City.— Dr. J. H. Burckhalter spoke at the January meeting of the Kansas Chapter of Sigma Xi on "Agents for the Treatment of Amebiasis."— Dr. C. F. Peterson and his class in Cosmetic Formulation recently visited the Colgate-Palmolive-Peet plant in Kansas City, Missouri.— Several faculty members attended the formal opening of the Squibb branch headquarters recently in Kansas City.— A group of junior and senior students made a field trip to the Eli Lilly plant in March.

University of Kansas City.—Forty junior and senior students visited the Abbott Laboratories in Chicago in March.— The dispensary located in the pharmacy building, has been remodeled to give better service. All University faculty members and students may obtain prescriptions through the dispensary which is in charge of graduate students who are registered pharmacists. It is open daily. The dispensary service has been integrated into the new health insurance plan of the University of Kansas City.— The Women's Auxiliary of the Retail Drug-gists of the Kansas City area were the donors of a \$500 gift to the school. A water cooler and office furniture were purchased with the money.— Dean L. L. Eisenbrandt attended the Mid-West Drug Conference in Albuquerque, New Mexico in January and District No. 5, Boards and Colleges in March.

University of Michigan.—At the mid-season meeting of the Michigan State Pharmaceutical Association, held in Battle Creek late in January, Dean T. D. Rowe, in his capacity as chairman of the Association's Legislative Committee, presented for consideration and discussion a completely revised state pharmacy law which the committee expects to have ready for the 1955 legislative session. The Dean was assisted in the program by a panel composed of members of the Legislative Research Bureau of the University of Michigan.— Four undergraduate and eight graduate students have been invited to membership in Rho Chi.

University of Minnesota.—The faculty and the Minnesota State Board of Pharmacy held their annual conference on mutual problems on January 25.— A Hobart A-200 Mixer and a Fitz mill have been added to the equipment of the manufacturing laboratory.— A group of 85 students visited the manufacturing plants of the Upjohn Company and Parke, Davis and Company on March 21-26.

University of Mississippi.—Nine pharmacy students were on the Honor Roll of the University for the first semester of 1953-54.— At the February meeting of the Student Branch, Dean Hammond reported on his trip with the Midshipman Cruise of 1953. He showed Kodachrome slides taken at sea enroute and also slides in Brazil, Barbados, Guantanamo Bay and Cuba.— Dr. W. Lewis Nobles and Dean

Hammond attended District No. 3 Boards and Colleges, at Mobile in March.— Mr. Joe Oliver and Dean Hammond participated in a television program over WMCT on March 21, entitled "Your Future in Pharmacy."— The second annual Pharmacy Conference for alumni and practicing pharmacists dealing with drugstore problems was held on April 15.— On January 29 seven students received the B.S. in Pharm. degree.— A total of 115 students are enrolled for the second semester.

Montana State University.—Last fall Associate Professor of Pharmacognosy T. G. Call and Assistant Professor of LeRoy Harvey of the botany department were made co-recipients of a \$1,625 research grant to make a study of the hay fever pollens present in the Missoula area. Emery Brunett, a member of last year's pharmacy graduating class, was selected as a research fellow in this project.— Dean Jack E. Orr attended the Rocky Mountain Drug Conference in Denver in February and was elected president of the Conference for the ensuing year.— Dean Orr and Professors Bryan and Call have been awarded a \$1500 research grant from the Sterling-Winthrop Research Institute to conduct a study of a cardiac principle present in a plant indigenous in the Montana area.— Dr. Muriel Loran attended the American Association for Cancer Research meeting early in April.— Prof. M. W. Fenney, newly elected Grand Regent for Kappa Psi and Mrs. Fenney were guests of the local chapter at a dinner at the Hotel Florence, March 18.— In March, fourteen juniors and seniors visited the Parke-Davis, the Eli Lilly, and the Abbott Laboratories.— The school sponsored a refresher course in mid-April.

University of Nebraska.—The Board of Regents of the University of Nebraska, in their meeting of February 10, decided that the new building for the College of Pharmacy, to be erected at 14th and S Streets, will be named "Lyman Hall," in honor of Dean Emeritus Rufus A. Lyman, its first dean. Dr. Lyman became the Director of the School of Pharmacy when it was organized in 1908, and its first dean when the Legislature of Nebraska, in 1915, passed the law creating the College of Pharmacy. Dean Lyman remained in this position until his retirement in 1946, after having served a total of 38 years in the service of pharmaceutical education at the University of Nebraska. One year after his retirement, he accepted a call from the University of Arizona, at Tucson, to organize a College of Pharmacy there. Having completed this task in three years, Dr. Lyman returned to his home in Lincoln. He is believed to be the only person in the history of pharmaceutical education who is responsible for the organization of two colleges of pharmacy. Although not directly concerned with teaching now, Dr. Lyman continues his interest in pharmaceutical education. He has been, since its founding in 1937, the Editor of the American Journal of Pharmaceutical Education, official publication of the American Association of Colleges of Pharmacy. This office carries with it ex-officio membership on the Executive Committee, and

he has not missed a meeting of the Association, nor of its Executive Committee, since his original election as Editor. He continues to enjoy good health and his gardening activities which are, in part at least, responsible for it.— Seven members of Beta Chapter of Kappa Epsilon and their faculty advisor, Phyllis Platz, were entertained by the Mu Chapter of the University of Kansas at Lawrence on February 14 and 15.— Three students received the bachelor's degree at the January commencement.— On February 9, Mr. Herbert A. Anderson, Administrator of the Lincoln General Hospital, entertained the Rho Chi Chapter at a hospital dinner, after which he gave a brief explanation of the functions, management and administration of the hospital and conducted the group on a complete tour of the Lincoln General.— Dean Emeritus R. A. Lyman and Dean J. B. Burt attended the interim meeting of the Executive Committee of the AACP and a joint meeting with the ACPE in Chicago, January 27-29.— Dr. H. G. O. Holck is chairman of the committee on Physiological Testing of the Scientific Section of the APhA, the function of which is to devise more accurate methods of assaying drugs by biological means.— Dr. V. E. Tyler, Jr., on February 19, presented a program entitled "The Pharmacy of Pepper" over station KOLN-TV. He used black pepper as an example of a common botanical product to explain the various methods by which the pharmacognosist determines the quality and purity of natural spices and drugs.

University of New Mexico.—Dean E. L. Cataline, in January, spoke before a meeting of the Southeastern District of the New Mexico Pharmaceutical Association at Artesia, and the Northeastern section at Las Vegas. The Midwestern Pharmaceutical Conference was held at the Hotel Hilton in Albuquerque on January 17 and 18.— The College was featured in a local TV show on January 11. The program showed developments in the field of pharmacy from prehistoric man up to the present time. The College has been invited to repeat the program this spring on the local station at Roswell.— The Student Branch has planned a series of programs, including a guest speaker, each month. Mr. Paul Stark, a retail pharmacist of Albuquerque was the first speaker. His subject was "The Small Retail Store with Emphasis on a Franchise."

University of North Carolina.—A student participation contest, held during the Christmas vacation and seeking endowment subscribers to the North Carolina Pharmaceutical Research Foundation, yielded \$1,356 from fifty-one contributors. Contest prizes were donated by the Foundation directors.— At its annual meeting in February, the Foundation budgeted, for the fiscal year 1954-55, \$9,710 for graduate fellowships, \$1,600 for research supplies, and \$500 for the library.— Dr. I. A. Solomons of Pfizer and Dr. Chester E. Poetsch of Smith, Kline and French recently addressed the graduate seminar on the implication of research in the pharmaceutical industry.— Mr. Fuad S. Zaru of Jordan, a graduate in pharmacy of the American University of Beirut, has been ap-

pointed as graduate assistant and is majoring in pharmacy.— Wm. D. Cash, an American Foundation for Pharmaceutical Education Fellow recently addressed the Elisha Mitchell Scientific Society on "Reproducible Results in Polladium Catalysis" based upon his own researches.— Members of the North Carolina Institute of Government have been giving their time and talent in the form of several lectures to pharmacy seniors on the subject of pharmaceutical jurisprudence.

North Dakota Agricultural College, School of Pharmacy.—Extensive changes were made in the physical facilities of the School of Pharmacy during the past summer. Formerly the School occupied only the first and part of the second floor of Francis Hall. Now the whole building has been taken over for pharmacy and the second floor has been completely remodeled. This provides adequate class room space and an additional new laboratory for undergraduate work in pharmacology. The research laboratory for pharmaceutical chemistry which was formerly housed in the basement has been moved to the second floor with enlarged space and new research laboratories have been provided for pharmacology. A laboratory dealing with manufacturers' pharmaceutical specialties has been instituted as well as an "instrument room" in which is housed all the special equipment used for research purposes.— Thirty junior and senior students visited the Eli Lilly Company, the Commercial Solvents Corporation, and the G. D. Searles Company between the winter and spring quarters.— A Student Branch of the APhA has been organized with a membership of fifty-two.— The North Dakota Cancer Society, Inc., has granted an additional \$4,000 to the School to continue a research project under the guidance of Dr. C. E. Miller.— New staff members include Dr. Ralph Banziger, from Purdue, as assistant professor of pharmacology; Mr. J. P. Street, from Commercial Solvents Corporation, as assistant professor of pharmacy; and Mr. A. Kueval, M.S., an alumnus, as instructor in pharmacy.

Ohio Northern University.—Through the efforts of the Student Branch, all of the lecture rooms are equipped with streamline lights. Three smaller laboratories are also equipped with this newer type of lighting.— During the summer, the Cleveland chapter of Alpha Zeta Omega fraternity presented the college with six new Troemner prescription balances in honor of Dean Emeritus Rudolph Raabe. The College has purchased four additional ones.— The Student Branch meets twice monthly with an outstanding individual in pharmacy as the guest speaker. The members have a candy and soft drink concession in the main office, which give them a better working capital for their college projects.— Dr. Bernard Levy who had his undergraduate work at the New England College of Pharmacy and the masters and the doctorate from Purdue, began his work as associate professor of pharmacology at the opening of the winter quarter.— Prof. Fred Clark is now devoting all his time to the office of the dean of men and Dr. Anna Koffler has taken over his work in pharmacognosy. Dr.

Koffler formerly taught pharmacognosy and bacteriology at the University of Kansas City. Both her undergraduate and graduate work was done in Europe. She has had two years of advanced work at Rutgers University since coming to the United States.

Oregon State College.—Thirty students participated in an educational tour of the Eli Lilly and the Parke, Davis plants and the Abbott Laboratories in February.— A promotional brochure is now being prepared to stimulate interest in the study of pharmacy, the publication and distribution is to be credited to the Oregon State Pharmaceutical Association. The cost is to be financed by the Association's student loan fund. The trustees of the organization have also authorized the granting of emergency loan funds up to \$100 to students, with a limit of \$1,000 set on the total of such loans outstanding. Previously only long term loans were available from the fund. Recommendations that the Association give consideration to the establishment of several \$165 per year "regional scholarships" was made by the loan fund trustees for the purpose of stimulating enrollments in pharmacy. Such scholarships were described as those awarded by and administered within a section of the state, and to be given to a worthy student from the same section.— New equipment for research activities include a \$1,150 Fischer microgramatic balance and \$1,800 for a Beckman spectrophotometer.— Prof. Herman C. Forslund was recently elected as 3rd Grand Vice Regent of Kappa Psi.— Prof. Forslund participated in the program of the *Pharmacy Town Meetings of 1954* sponsored by the Oregon Branch of the APhA held in Portland on March 17 and 18. The topic of the meeting was "Laws and Legal Problems Affecting Pharmacists."— Prof. Fred Grill presented a talk entitled "Pharmaceuticals" before a meeting of the Oregon State Association of Chiropractors on March 7 in Portland.— Dr. Daniel F. N. Tsao was recently granted \$150 from the General Research Fund of the Graduate School to pursue studies on digitalis.— Grand Regent N. W. Fenney and Mrs. Fenney visited the Beta Zeta Chapter of Kappa Psi on March 24.

Philadelphia College of Pharmacy and Science.—Members of the faculty will deliver 15 lectures during the second semester over the WFIL-TV University of the Air, Channel 6, Philadelphia.— Master of Science in Pharmacy degrees were bestowed upon two prominent practicing pharmacists during the Founders' Day Ceremonies on February 15. The recipients were Mr. J. B. Heinz of Salt Lake City, Utah, past-president of the American Colleges of Apothecaries, and first vice president elect of the APhA, and Mr. James B. Merrick of Ardmore, Pennsylvania, prominent in professional and civic activities in that area, and a director of the Alumni Association.— At the Alumni Mid-Winter Reunion dinner on February 20, three former professors were honored guests. They were Dr. Horatio C. Wood, Jr., Dr. Karl Scholz, and Prof. Edmund H. MacLaughlin.— Assist. Dean Linwood F. Tice has been named a member of the Board of Directors of the American Foundation for Pharmaceutical Education.— On March 10, the Rho

Chi citation was given to Dr. K. K. Chen of the Lilly Research staff. 22 student and faculty members were initiated into Rho Chi at a dinner, after which Dr. Chen delivered the second annual Julius Sturmer Memorial Lecture.— More than 100 members of the Faculty, the Board of Trustees and other friends attended a testimonial dinner in the Union League of Philadelphia in honor of President Ivor Griffith. The dinner was in recognition of his inspiring leadership over the past thirteen years, and especially because of his direction of the current campaign to enrich the permanent funds of the college, a drive to insure its perpetuation as an independent teaching institution.— The College is now offering to properly qualified students, a number of graduate assistantships in pharmacy for year 1954-55. These assistantships require nine months of service with a maximum teaching load of twelve student contact hours weekly. Each assistant receives a stipend of \$1,000; tuition and all other fees are remitted. Assistants may enroll for the master's or the doctorate, and may major in pharmacy, pharmacology, pharmaceutical chemistry or the biological sciences. It will require two academic years for an assistant to acquire the master's degree.

University of Pittsburgh.— *The Pittsburgher Magazine* published a short story, "Hugo Rebels" in the February number and *The Carnegie Magazine* carried an article on "Andreas Vesalius, the Father of Anatomy" in the November issue, both written by Prof. William L. Blockstein. Prof. Blockstein presented a discussion on "How You Can Improve Your Public Relations" before the Pittsburgh Branch of the APhA at a recent meeting in the Mellon Institute.— Miss Rose Goldfield and Mr. Edward Hudak, both lecturers in chemistry, received the master's degree at the January commencement. Miss Goldfield did her work on the "Analytical Constants of the Fixed Oil from the Seed of *Pyrullaria Pubera Michx*," and Mr. Hudak wrote his thesis on "Isomeric Normal Nonynoic Acids."— The motion picture film "Old Doc," which portrays a day in the life of a pharmacist, has received wide spread acclaim having been shown to many civic and community organizations and discussed by Dr. Melvin W. Green, Educational Director of the ACPE, in the *American Journal of Pharmaceutical Education*.— The Pennsylvania Academy of Science has announced that the first Darbaker prizes will be awarded this spring at the 1954 meeting of the Pennsylvania College for Women. They are to be awarded under the terms of the will of the late Leasure Kline Karbaker, former head of the department of pharmacognosy. The awards, in two divisions, are to be given for Microbiology for the Academy Division, and in one of the Biological Sciences for the Junior or High School Division of the Academy.— Charles Danver of the Pittsburgh Post-Gazette, in his daily column, marked the celebration of the 89th birthday of Dr. Julius Arnold Koch, '84, Dean Emeritus of the School of Pharmacy.— Mr. Clarence K. Williamson, instructor in biological Science, attended the recent meeting of the Allegheny

Branch of the Society of American Bacteriologists at the University of West Virginia.— Instructor Joseph D. McEvilla spoke recently on "Educational Trends in Hospital Pharmacy" before the Western Pennsylvania Association of Hospital Pharmacists. He dealt with graduate and undergraduate programs in colleges of pharmacy in the entire United States, and covered hospital pharmacy courses, whether required or elective courses of instruction.— Drs. Joseph P. Buckley and L. D. Edwards, and W. A. Hiestand authored "The Effect of Discontinuous Decompression of Blood Pressure in the Rat" which was published in the October 1953 number of the *American Journal of Physiology*. The paper was included in a selected list of abstracts in the November issue of the "Anatomical Record."— At a recent meeting of the Allergy Seminar of the Montefiore Hospital, Dr. Edward P. Claus gave a summation of a panel discussion of "Pollen and Fungus Extracts." The panelists spoke on pollen extracts, their source, supply and their preparation; fungus extracts, sources, supply and their preparation; the clinical significance of mold therapy. At a later date Dr. Claus also presented an illustrated discussion entitled, "Allergenic Grasses of Western Pennsylvania" before the same group. Dr. Claus, as Grand Council Deputy, attended the Kappa Psi convention in Washington during the Christmas holidays.— Dean Edward C. Reif was the guest of Alpha Zeta Omega at a testimonial dinner in his honor on January 20 at the Webster Hall Hotel. Dr. H. G. Longenecker, Dean of the Graduate School, spoke on the accomplishments of Dean Reif who is currently serving as president of the AACP.— The three local units of the Alpha Zeta Omega fraternity have combined to raise funds to complete certain library files and for the binding of rare pharmaceutical periodicals. The local units are Mu Chapter at the School, the Pittsburgh Alumni Chapter, and the Women's Auxiliary group.

Purdue University.—The School of Pharmacy was host for the District Four Convention of the Student Branches of the APhA on April 7-9. Thirteen schools of pharmacy were represented from six states.— The Chambers Zufall Scholarship Fund is continuing to grow. Persons interested in supporting this fund should make checks payable to the fund and send to the School of Pharmacy.— Mr. M. M. Goodnight, '31, of Goodnight's Pharmacy, has been elected president of the Lafayette City Council.— Dr. Glen J. Sperandia has recently been elected to the office of Grand Ritualist of Kappa Psi.— Bernard Levy and J. Santos Martinez, who have completed work for the doctorate, and Robert J. Schlembach, who is a candidate for the doctorate, have accepted teaching positions at Ohio Northern University, the University of Puerto Rico, and at Toledo University, respectively.— Wilson Nashed, who has completed work for the doctorate in pharmacy is with E. R. Squibb and Sons in Brooklyn, N. Y.— F. J. Stock, '28, vice-president of the Mathieson Chemical Corporation, has been elected president of the New York Board of Trade.

University of South Carolina.—Prof. Robert C. Stokes addressed the Eau Claire Lions' Club in January on "The Pharmacist's Role in Your Life."—The Women's Auxiliary of the South Carolina Pharmaceutical Association purchased and hung new drapes in the student study.—The third series of the Parke-Davis pictures depicting the "History of Pharmacy" have been framed and placed in the various classrooms and laboratories.—Dr. James M. Campbell addressed Le Conte in January on the topic "Objective Odor Measurements." He discussed the technique of scientifically measuring odors as determined by experiments performed by him at Purdue University.—The pharmacy staff has inaugurated a monthly seminar, the purpose of which is to form closer coordination of curricular activities and to promote fellowship among faculty members.—All faculty members attended the February meeting of the Fifth District Pharmaceutical Association.—Dean Morrison and Dr. J. W. Campbell attended the organization meeting of the South Carolina Section of the American Society of Hospital Pharmacists held at the Self Memorial Hospital at Greenwood on January 30.—Registration for the spring semester totals 147 students, 14 of whom are women.—Acting Dean R. W. Morrison has been elected a faculty fellowship in the American College of Apothecaries.—Three faculty members, Dean R. W. Morrison, Dr. J. E. Hunter, and Arthur C. Lytle, presented papers at the meeting of District No. 3, Boards and Colleges at Mobile, Alabama, March 15-16.—Dr. James A. Campbell has been elected to full membership in Sigma Xi by the Purdue University chapter.—An elective course in Hospital Pharmacy is being offered for senior students. It includes the history, development, organization of the hospital pharmacy as well as the laws and regulations governing its operation.—Nine pharmacy students were named on the Dean's Honor Roll for outstanding academic achievement for the past semester.

Southern College of Pharmacy.—A short course on "The Physiology and Therapeutics of the Sex Hormones" was held at the College February 16, 18, 22, and 24. There were thirty-seven registrants for the course, representing the various branches of the profession, viz., retail stores, hospital pharmacists, manufacturer's detailers, and several representatives of the medical profession. Certificates were awarded at the final session to those members who had completed the entire course. The course was so planned that each member of the faculty presented the material in his field pertaining to the course. At the first session Prof. Charles R. Boyles discussed the anatomy of the reproductive system. At the second session Dr. Douglas Johnson presented the physiology of reproduction and Dr. Minnie M. Meyer and Dr. Wei-Chin Liu lectured on the chemistry of the sex hormones. At the last two sessions Dr. Johnson presented the pharmacology and therapeutics of the sex hormones while Dr. Oliver M. Littlejohn and Prof. Ernest J. Jacob presented prescription products and specialties and Mrs. Martha Jane Zachert discussed references sources and means

of keeping up-to-date on hormone products. The success of this first attempt at a short course has induced the administration to make this an annual part of its program for service to the pharmaceutical profession.— A group of forty students were guests of the S. E. Massengill Company of Bristol, Tennessee and of the Chattanooga Medicine Company of Chattanooga in February.— Dr. Douglas Johnson attended the Joint Meeting of the Georgia and South Carolina Hospital Pharmacists Association, January 30, at the Self Memorial Hospital in Greenwood, South Carolina.— At the second quarter meeting of the Student Branch, Dr. Oliver M. Littlejohn reviewed the Code of Ethics of Pharmacy. At the conclusion of the review other members of the faculty served on a panel for a discussion to answer questions posed by the students.— Mrs. Martha Jane Zachert, the librarian, received the degree of Master of Librarianship from Emory University at the close of the 1953 summer session.

Southwestern State College, School of Pharmacy.—At a meeting of the Oklahoma Society of Hospital Pharmacists held in Saint Anthony's Hospital on January 2, Mr. Robert Reynolds, chief pharmacist at St. Mary's Hospital in Enid, spoke on the subject "Problems in Hospital Pharmacy." Dr. Charles Schwartz of the pharmacy faculty, spoke on the subject "Distribution of Information in the Hospital."— John Little, senior pharmacy student, was selected College Rotarian of the month of January by the Weatherford Rotary Club.— Dr. Bernard Debunsen, president of the British Mahara College, Uganda, British East Africa, spoke before the Student Branch in January, on the topic "Education in East Africa."

St. John's University.—The University announced the celebration of the twenty-fifth anniversary of the College of Pharmacy on April 24 and 25, 1954. In honor of the occasion, honorary degrees will be awarded to Jasper Kane, vice-president and director of research for Charles Pfizer and Co., and Dr. Hugh C. Muldoon, dean of the College of Pharmacy of Duquesne University. Mr. Kane will speak at the Academic Convocation. Included in the program is a symposium with such distinguished representatives from industry, education and retail pharmacy as Mr. Thomas Winn, vice-president and general manager, Charles Pfizer Laboratories; Dr. Lloyd E. Blauch, chief of education in the Health Professions; Dr. Robert P. Fischelis, secretary and general manager of the American Pharmaceutical Association; Rev. Bernard E. Tierney, C.M., associate professor of ethics, in the College of Pharmacy; and Dr. Frederick D. Lascoff, practicing pharmacist. Following the symposium will be a showing of a film on "Radio-isotopes—Their Application to Humans," produced by Mr. Joseph Hackel, president of the Medical Film Guild. To climax the celebration, the alumni will sponsor a banquet at the Waldorf-Astoria at which Dr. Hugh C. Muldoon will be guest speaker.

St. Louis College of Pharmacy and Allied Sciences.—For graduate students registered in the Industrial Pharmacy courses, a schedule is

prepared which requires the visitation and study of the operation of twelve industrial plants in the St. Louis area. The visitations begin in October and occur at more or less regular intervals throughout the academic year ending with a tour of the Lilly, the Parke-Davis, the Upjohn plants and the Abbott Laboratories the following May. In each plant, the tour is conducted by expert guides and the students are required to record in notebooks the observations made and the information gained from the guides. They are required to prepare these notebooks in proper form and present them as a part of the requirements in the courses in Pharmaceutical Production and Unit Operation in which they are registered.— A research grant of \$8,850 has been made to the department of biology by the National Cancer Institute of the United States Public Health Service. It will be used by Dr. Frank L. Mercer and his research assistant, T. E. Lindhorst, in the continuation of a study of the mechanism of tobacco mosaic virus synthesis which Dr. Mercer has been conducting for the past five years.— The department of pharmacology has received two more research grants, one from the Burroughs Wellcome Company to conduct studies on Tricoloid, the other from the Schering Corporation for work on the long-acting antihistamines. The studies will be conducted by Dr. Arthur G. Zupko and Leon D. Prokop.— Dr. George F. Reddish, professor of microbiology, is the editor and one of the thirty contributors to a new 841 page book, *Antiseptics, Disinfectants, Fungicides and Chemical and Physical Sterilization*, published in February by Lea and Febiger.— The annual Refresher Course, held on March 4, drew an attendance of 143. The major subjects were: New Medicinals; The Status of the Modern Dentifrices; Income Tax Check Points; Current Prescription Problems and Their Solutions; Inventory Made Easier; Trends in Modern Therapy; and Profits on Specialty Prescriptions vs. Compounded Prescriptions. "Open House" was held in the evening. Exhibits and demonstrations were explained by student guides who escorted about 400 guests through the various laboratories.— The annual association is heading up the endowment fund campaign. General Chairman W. T. Dooley, Jr., has an advisory board of 32 members to spearhead the two million dollar drive.— William K. Ilhardt, class of 1888, who personifies the finest traditions of the profession, is completing his fiftieth year as secretary of the board of trustees of the college.— Dr. James R. Thayer, associate dean, has been reelected Grand Counselor of Kappa Psi.— Prof. Charles Rabe addressed the mid-year meeting of the American College of Apothecaries in Chicago.— Louis C. Schroeder, assistant instructor in pharmacy is now serving in the United States Army camp at Pickett, Virginia.— Charles E. Caspari, Jr., of the Montanto Chemical Company, son of the late Dean Charles E. Caspari, has been elected a member of the board of trustees of the college.

Temple University.—On May 6, the School of Pharmacy will dedicate the new Frank F. Law Memorial Laboratory. The equipment of the new pharmaceutical laboratory which is housed in the pharmacy

building, was furnished by Wyeth Laboratories, of which Mr. Law served as vice-president from 1943 until his death in 1950. Previous to this he was president of John Wyeth and Brother from 1934 until that firm was merged with several others to become Wyeth Laboratories. He was an alumnus of the School, a former president of the alumni association and a trustee of the University at the time of his death. The new laboratory is provided with pilot plant equipment of the most modern design, selected for the purpose of teaching manufacturing procedures and product development. At present the laboratory is being used in the teaching of a course instituted at the school for the first time last fall. The new course represents the first cooperative training program carried on between a college of pharmacy and industrial companies. Eleven specialists from the cooperating firms have recently finished taking part in an introductory course in which a complete picture of manufacturing operations was presented to students by men expert in their respective fields. A unique feature of the curriculum is a supervised training program provided by the cooperating firms as a part of the course requirement. The in-training portion of the course covers six months of actual experience in the laboratories of one of these firms.

University of Tennessee.—Dean Karl Goldner and Instructor W. B. Swafford attended the meeting of District No. 3 at Mobile, Alabama on March 15 and 16.— Dr. Albert Musick attended the annual post-graduate course of the American Academy of Allergy at Houston, Texas, January 29-31, taking the course on "Allergenic Molds and Pollens." Plans are being made for a course at the University in the near future.— The junior and senior students were guests of the Abbott Laboratories in Chicago in April.— Mr. T. A. Noonan, advisor to the detailing staff of the Bilhuber-Knoll Corporation, presented for the second time during the winter quarter, a course in Medical Service Pharmacy and Professional Detailing.

University of Texas.—Twenty-three men and one woman were graduated at the end of the fall semester, six of them "with Honors." Dean John F. McCloskey of Loyola University, New Orleans, was the commencement speaker. His subject was "Ethics and Pharmacy."— The annual Seminar for Hospital Pharmacists which is sponsored jointly by the College, the University of Texas Extension Division and by the Texas Society of Hospital Pharmacists, was held on March 19-20. The speakers were members of the faculty and various members of the hospital staffs throughout the state. Among outside guest speakers was Groves C. Bowles, chief pharmacist, Strong Memorial Hospital, and instructor of pharmacology, University of Rochester School of Medicine and Dentistry, whose subject was "A Practical Approach to Manufacturing in Hospital Pharmacy." A number of guest speakers addressed the student body on various aspects of drug store operation during the months of January and February. Among them was Mr. Louis White, chief investigator for the State Board of Pharmacy, who

discussed the new legal regulation concerning practical experience for qualifying for the Board Examination. This consists of not less than 1000 hours, acquired at the rate of not less than four hours per day for a five day week.— As previously announced, the San Antonio Drug Company has established a \$1,000 scholarship for the purpose of studying the history of the firm during its 100 years of operation as the first wholesale drug company in the state, especially as this history relates to the development of pharmacy in Texas. Miss Johanna Blumel, Ph.D., a senior in the college of pharmacy, has been awarded the scholarship. She received the doctorate from the University of Texas in 1949 with a major in genetics and has earned national distinction in this field. At the present time she holds a part-time position in the Biochemical Institute. She will finish her senior work in pharmacy this spring and undertake the historical study under the supervision of Prof. C. C. Albers.— Nu Chapter of Rho Chi has elected Mr. Eugene M. Caskey of Jacksonville, Texas, to honorary membership because of his untiring efforts as a retail pharmacist in the interests of professional pharmacy in the state and his interest in the College of Pharmacy. Prof. Gunnar Gjerstad and six students have also been received into membership.— Dale Cummings was given the freshman award for his high scholastic average during the first year.— Dean Burlage and Dr. W. R. Lloyd attended the meeting of District No. 6, AACP and NABP held in Oklahoma City in March.— The Clayton Foundation has renewed a grant of \$20,000 for continuation of the studies on plant extractives in cooperation with Dr. Alfred Taylor of the Biochemical Institute.— A Laboratory Manual of Organic Pharmaceutical Chemistry has just been published by Drs. C. O. Wilson and Robert F. Doerge.— A course in drug marketing has been introduced in the pharmacy curriculum and will be taught by Dr. A. Hamilton Chute, professor of retailing and specialist for the Bureau of Business Research in the College of Business Administration.— Mrs. Esther Jane Hall addressed the Austin Pharmaceutical Association in January on the subject, "The Pharmacist in Retail Distribution." Mrs. Hall has a Fellowship from the American Foundation for Pharmaceutical Education for study in the field of pharmacy administration. She was the first woman recipient of the master's degree in this field last year.— Prof. C. C. Albers is the representative of the College of Pharmacy on a committee, appointed by President Wilson, to examine ways and means for promoting excellence in teaching on the University campus, including an examination of ways and means for recognizing, approving and rewarding such teaching. The committee is inviting suggestions from all possible sources and Prof. Albers hereby invites the readers of these notes to communicate to him their suggestions in one or more of the areas of the assignment.

Texas Southern University.—In March, the senior students made an educational tour of the plants of Sharpe and Dohme, Philadelphia, E. R. Squibbe and Sons, New York, and Merck and Company, Rah-

way, New Jersey.— During February and March, Dean Hurd M. Jones attended meetings of the Lone Star Medical Association at which he presented the proposal of preparing a local formula based on generic names of several drugs marketed under a multitude of trade names.— On March 3, the school sponsored an all-day seminar for the benefit of pharmacists in the Houston area. The general subject was "A Public Relations Program for the Practicing Pharmacist." It was broken down for a panel discussion such as "Prescription Pricing as it Affects Public Relations—The Three-Phase Public Relations Program—Treating Customer Relations—Inter and Intraprofessional Relations and Community Relations." On the panel were the representatives of various manufacturing concerns, a retail pharmacist and Instructor J. Clarence Davis, department of education, Texas Southern University.— The Spatula Club, an all-girl organization of the School of Pharmacy, sponsored a University assembly program on March 16 on the "Physiology of Menstruation."

University of Utah.—The alumni, students, and friends of the college of pharmacy sponsored a testimonial dinner honoring Dean L. David Hiner on March 15, in the University Union. Dr. Hiner organized the school in 1947 and became its first and only dean. In the short space of seven years he has made it one of the most progressive schools of the west.— In March, forty-six junior and senior students made an educational tour of the pharmaceutical manufacturing plants in Chicago, Detroit, and Indianapolis.— The local chapter of Phi Delta Chi is devoting its energies to the establishment of an Inter-Fraternity Council representing the professional fraternities within the University.— The Student Branch has completed its project of packing 1500 first aid kits for distribution to pharmacists and other civil defense leaders throughout the state of Utah.— Mrs. Margaret Walker, marketing instructor in the college of business administration, has been appointed to teach the course in marketing in the college of pharmacy during the absence of Mr. Milton P. Mathews while he works for the doctorate at Columbia University.

Medical College of Virginia, School of Pharmacy.—The School of Dentistry has moved into a new building and the School of Pharmacy will occupy most of the space in McGuire Hall made available by this change.— Dr. M. L. Neuroth has been elected national president of the Rho Chi Society.—Dr. James Young has received a commission in the United States Army and is now on duty with the Armed Forces.— Dean R. Blackwell Smith, Jr., has had two publications appearing in the *Journal of Pharmacology and Experimental Therapeutics*, one in the October and the other in the December, 1953 issue.— The senior class visited the Eli Lilly Company plant in February.— Paul R. Brandt is now enrolled in the Medical College of Virginia Graduate School pursuing work toward the degree of Master of Science in Hospital Pharmacy.— The Virginia Pharmaceutical Association sponsored a seminar on veterinary medicine and preparations at the Hotel Roanoke

in March.— Dr. R. Blackwell Smith, Jr., has been selected by the Board of Visitors to succeed as President of the Medical College of Virginia upon the retirement of Dr. W. T. Sanger. Dr. Smith will serve as Assistant President from July 1, 1954, to July 1, 1956, when he will assume the full duties of the office of President.

George Washington University.—Dean Charles W. Bliven spoke on the subject "Some Aspects of Pharmaceutical Education," on March 4, before the Traveler's Auxiliary, which is an organization of local medical service representatives, of the District of Columbia.— The District of Columbia Pharmaceutical Association has contributed funds to aid in the distribution of the brochure "Shall I Study Pharmacy?" To date, about 500 copies have been placed in the high schools of the metropolitan area.— A loan fund has been established by the Schoenfeld family for use by pharmacy students as a memorial to the late Benjamin Schoenfeld, a local pharmacist. This has been supplemented by the Alpha Zeta Omega Pharmaceutical Fraternity and now totals \$1,000.— Mr. Paul C. Wieseman, of the Norwich Pharmacal Company addressed the student body on February 17 on the topic "Research in Pharmaceutical Preparations."— The Faculty Womens' Club held their March meeting at the Greek Embassy as guests of the Greek Delegation and their wives.

University of Washington.—Dr. Heber W. Youngken, Jr., spoke on "Physician-Pharmacist Relationships" before the Snohomish County Medical Society in January. The local pharmacists were also invited. In March, he addressed the Medical School Pharmacology Seminar on the topic "Research in the Field of Plant Constituents."— Mr. M. L. Berman took his master's examination in pharmacognosy on March 15.— The College was host to District No. 7, Boards and Colleges in April.— Drs. E. M. Plein and L. W. Rising are on the University's Teaching Hospital Pharmacy Subcommittee.— Dr. Plein recently made a field trip with his hospital pharmacy class through the Kirkman Pharmacal Company.— Dr. Walter McCarthy gave a paper on the "Synthesis of Some Cycloheptylalkyl Amines" before the pharmacy subsection of the American Association for the Advancement of Science at its recent Boston meeting.— Dr. J. M. Fairbairn, visiting professor of pharmacognosy from the University of London, has been kept extremely busy with speaking engagements.— Drs. Fischer and Hall have designed a modified Cassia Flask which was described in a recent issue of *Drug Standards*.— Dr. Fischer was reelected First Grand Regent for Kappa Psi at the recent national convention held in Washington, D. C.

State College of Washington.—Beginning this year the college will sponsor a postgraduate refresher course for practicing pharmacists. Hereafter, it will alternate yearly between this institution and the University of Washington. The course will cover a two day period, April 21 and 22. The faculty will include outstanding speakers from both institutions and representatives of manufacturing con-

cerns. Dean Troy C. Daniels of the University of California will be on the program. The first day's program will be devoted primarily to a survey of recent advances in specific pharmaceutical areas. The second day's program will consist of a diversified treatment of the business problems of pharmacists. Dr. C. Clement French, president of the State College, will be the luncheon speaker on the first day, and Dr. C. O. Johnson, professor of political science, will be the guest speaker at an evening banquet. A special ladies' program is planned for the wives of the attending pharmacists.— A new thermostatically controlled drying cabinet has been purchased for the large scale drying of crude drugs and a former classroom has been converted into a drug-processing and drug-storage room in preparation for the study of wild growing native plants. The pharmacy greenhouse will be rebuilt in the spring.— Dr. Melvin R. Gibson has been granted a stipend for the year 1954-55 from funds accruing from the State of Washington Initiative Measure 171 for a part time research assistant.— Mr. Laurence Gale has been appointed as acting instructor in pharmacy for the current school year. He received the bachelor's degree from the Idaho State College and the master's from the State College of Washington and is a candidate for the doctorate in June. He plans a teaching career.— The School of Pharmacy will be represented at the District No. 7 meeting of Boards and Colleges in Seattle, in April, by five members of the pharmacy faculty.

West Virginia University.—The Beta Eta chapter of Kappa Psi, which was chartered on May 16, 1925, and became dormant in 1934 with the depression years, was reactivated on March 7, 1954, with the initiation of 26 new men. The ceremonies were conducted by Grand Regent Nicholas F. Fenney of Hamden, Connecticut and Second Grand Vice-President M. L. Neuroth of Richmond, Virginia.— Mr. Ernest K. Hoge, a practicing pharmacist in Wheeling, West Virginia for the last 65 years, spoke at the March meeting of the Student Branch on the subject "Pharmacy from the Heart." Mr. Hoge's experiences during those years furnished the subject matter for his excellent talk.

University of Wisconsin.—Dr. George Urdang, emeritus professor of the history of pharmacy at the University, and director of the American Institute of the History of Pharmacy, and honorary president of the World Organization of Societies for Pharmaceutical History, has been named principal investigator, covering the year 1954, in the School of Pharmacy by the University Board of Regents.— Contracts for a \$390,000 wing to the chemistry building to house the School of Pharmacy, have been approved by the Regents of the University, subject to the approval of Governor Walter Kohler.

University of Wyoming.—A special room has been set aside in the pharmacy building to be used as a recreation and lounge room for students. It has been partially redecorated and provided with a coffee urn under the sponsorship of the Phi Delta Chi fraternity. It is planned to have a snack bar at a future date — A new employment program

for seniors and for graduates of the college has been developed through the cooperative action of the office of the pharmacy dean and the office of the director of student personnel and guidance. The dean and the director will direct activities under the new program.— The college of pharmacy held open house for members of the Wyoming Section of the American Chemical Society on the evening of March 19. After Dean O'Day discussed some problems of modern pharmaceutical education and pharmaceutical research, the members of the faculty spoke of recent educational developments and research projects in their respective departments.— A number of members of the staff attended the meeting of the Rocky Mountain Drug Conference in Denver in February.— A Pascall Engineering Company roller mill has been added to the equipment of the manufacturing laboratory.— Under the sponsorship of the college of pharmacy, approximately one hundred pharmacists, owners of pharmacies, medical service representatives, pharmaceutical educators and senior students met in Laramie on February 7 and perfected an organization of Southeastern Wyoming Pharmacists. The purpose of such an organization is to promote inter-professional relations of pharmacists and other health groups. Officers were elected and plans for future meetings were made.

The Ontario College of Pharmacy has been in operation for over 80 years. Since 1892 it has enjoyed affiliation with the University of Toronto. After that date some of the lectures were given at the University which also granted the degree. The teaching staff of the College was under the jurisdiction of the College Council. On July 1, 1953, the teaching staff was taken over entirely by the University. While the affiliation in the past has been a very happy one, the great advantage in the educational programs of pharmacy and the related sciences made it imperative that a closer arrangement should be made in order to partake in full of the advantages of being a part of a great university which would give pharmaceutical education a stability it could not otherwise enjoy in the expansive years that lie ahead. The College will continue to function as the statutory licensing body for the Province and to administer the Pharmacy Act.

Marriages

William G. Moore and Miss Rose Wurdack, daughter of Dr. John H. Wurdack, University of Pittsburgh, on January 9, 1954, in Pittsburgh.

Miscellaneous Items of Interest

MEMORIALS

HOWARD BISHOP LEWIS

On Sunday, March 7, Dr. Howard B. Lewis, internationally-known biochemist, died of a cerebral accident. The initial attack occurred well over a year ago. During the intervening period of time Dr. Lewis has been unable to continue his many services to biochemistry and to the University. He was in his 67th year, and had served as head of the Department of Biochemistry of the Medical School at the University of Michigan since 1922. The Department, under Dr. Lewis' leadership, fulfilled admirably the demands of the Medical School, and at the same time served in a superior fashion as a general department of biochemistry. Students in pharmacy, dentistry, biology, and other fields at the University, as well as in medicine, profited from the superb teaching of this outstanding scientist.

Dr. Lewis did both his undergraduate and graduate work at Yale University, receiving the degree of Ph.D. in biochemistry, in 1913. His graduate studies were with Dr. L. B. Mendel, the outstanding American physiological chemist of his day. As a result of the leadership of Mendel, Dr. Lewis became interested in the biochemistry of proteins. He eventually became widely known as an authority on intermediary metabolism of sulphur-containing proteinaceous compounds.

During the course of his professional career, Dr. Lewis showed a rare combination of outstanding ability in research, scholarship, teaching, and administration. Among his many extra-curricular activities was that of Contributing Editor for many years of the *Journal of Biological Chemistry*. He was a member of the National Academy of Science, and of many national honor societies.

From 1933 to 1947 Dr. Lewis served as Director of the College of Pharmacy at the University of Michigan. During this time he became known to many other leaders in pharmaceutical education, and was a regular attendant and participant at the annual meetings of the American Association of Colleges of Pharmacy. Dr. Lyman has recently observed that strength was given by the mere presence of Dr. Lewis at our various annual meetings.

It is obvious that this great scientist will be missed for his scientific and educational contributions, but even more than this, to many he will be missed because of his warm personal and human qualities. Kindness was first displayed toward me many years ago when I first consulted him concerning studies in the field of biochemistry. Be-

cause of troublesome scheduling problems in major courses, I asked permission to take the introductory course in biochemistry in unorthodox fashion. I wanted to begin with the last half of the course, follow the next semester with the first half, and postpone laboratory work until a third semester. When the circumstances were explained, permission was courteously granted. Subsequent graduate courses increased my admiration of Dr. Lewis as a teacher and as a friend.

Later he visited me several times in Newark, New Jersey, on the occasion of trips taken to New York City. He was always a most agreeable guest, enthusiastic about the opportunities available in a large metropolitan center, and interested in personal problems of a former student serving as a teacher.

In the field of biochemistry and medical education, Dr. Lewis was an indefatigable worker with rare good judgment. He will be sorely missed by his colleagues in these areas. On the campus he was well known as a first-class teacher and as one of the distinguished professors at the University. His many friends will miss him for more personal reasons, and the wife and two daughters he leaves have lost an affectionate husband and father.

Richard A. Deno

RAY STANLEY KELLEY 1895-1954

Students, faculty members, and alumni of colleges of pharmacy throughout the United States mourn the loss of Ray Stanley Kelley, Associate Professor of Chemistry at the Massachusetts College of Pharmacy. He died on March 13, 1954 at his home in Newton Highlands.

His own students thought of him not only as a teacher but as one who took a great personal interest in all their activities. To some of them as their faculty adviser, to more of them as their fraternity adviser, and to a great number of them as the adviser of their Student Branch of the American Pharmaceutical Association, he was known and appreciated as a man who was deeply concerned with their welfare and happiness.

Members of the faculties of colleges of pharmacy enjoyed knowing him as a friendly, interesting companion at meetings and conventions and as the very efficient secretary of the several national organizations that he served in this capacity, including the Scientific Section of the American Pharmaceutical Association, the Conference of Teachers of Chemistry, and the Kappa Psi Fraternity.

As Grand Secretary-Treasurer of Kappa Psi Fraternity since 1941 he spent many weekends and vacation periods visiting the colleges of pharmacy throughout the United States in the interest of Kappa Psi and of the profession of pharmacy. Thereby he became acquainted with thousands who are now alumni of these colleges. He was a man who attracted their friendship.

Ray Kelley was very close to his church and to his family. A member of the Newton Highlands Congregational Church, he had served it as a deacon and as superintendent of its Sunday School. He was always happiest when in the company of his wife, Doris, and their three children, Elizabeth, Ray, Jr., and William. His church and his family lost a devoted leader.

Ray Kelley's personality is now a memory, but in the minds of all who were privileged to know him it is an inspiring memory. How fortunate are his friends to have this memory and this inspiration.

Howard C. Newton

WAYLAND DELANO WILCOX

Wayland Delano Wilcox was born November 15, 1875, in Coventry, Rhode Island. His parents were John Delano Wilcox and Elinor Elsinä Wilcox, nee Leach. She was a lineal descendant of John Wickes, who came to America from England in 1637 and landed at Plymouth, Massachusetts, with Mary his young wife. In 1638 he and his family with others of the Colony left for what is now known as Portsmouth, Rhode Island.

In 1893 the family financial situation was acute and at the suggestion of the Coventry Superintendent of Schools, Mr. Wilcox took and passed examinations which entitled him to a teacher's certificate and he was hired to teach in Coventry schools. He was thus employed during fall and winter terms and the modest salary earned was a welcome addition to family income.

This early and strenuous experience aroused desire and determination to secure a better education in order to qualify for better employment. Mr. Wilcox consulted another Coventry young man who had so qualified and had just received his doctor's degree from Cornell University, and was to teach history and political science at Alfred University in Alfred, New York. He agreed to tutor Mr. Wilcox during summer vacation, and suggested that he enter Alfred Academy to prepare himself for college entrance. This he did, and during the first year, by sharing a room with his boyhood faculty friend, and by tending furnaces and waiting on dormitory dining room tables he got by financially. He also managed to play baseball and football, and take part in such campus activities as singing in the glee club and acting in student dramas.

By passing New York Regents examination, as approved by his teachers, and by taking and passing summer courses, Mr. Wilcox completed the four year academic course in three calendar years.

The Spanish American War, and marriage postponed college entrance until a later time.

In September 1902 opportunity to secure college training was offered. He moved to Chicago where he entered Lewis Institute as a freshman, and at the same time began a course at Chicago Seminary, and was enrolled in both institutions until June, 1904 when he was

graduated from Lewis Institute and secured its certificate of Associate in Literature.

Lewis Institute was affiliated with the University of Chicago which granted full credit for its instruction in freshman and sophomore years. Mr. Wilcox therefore, entered the University of Chicago as a junior in the Autumn quarter of 1904 and he graduated in June 1906. Work previously done at Chicago Seminary with elective course taken at the University of Chicago Seminary entitled Mr. Wilcox to the degree of D.B., as well as that of Ph.B., and both these degrees were granted to him on his graduation.

From the Autumn of 1906 to the Spring of 1912, Mr. Wilcox was Professor of English and Public Speaking at Alfred University. He taught courses in English and Public Speaking at Alfred University, and directed the plays presented by the student Footlight Club. He also drilled and directed the student performance of Shakespearean plays presented at College Commencements each year.

In the Spring of 1912 he was granted leave of absence to enable him to travel to East Africa for a tour which covered parts of the Cape Colony, Portuguese, East Africa, British East and Central Africa and Nyasaland, and further leave upon his return so that he might accept a Fellowship for graduate study at the University of Chicago.

The African travel experience provided the author with material for an illustrated lecture which was given throughout the school year, under the auspices of the Chicago Daily News in Chicago High Schools. At completion of his graduate study his doctorate degree of Ph.D. was obtained.

In the summer of 1914 Mr. Wilcox became associated with the American Institute of Child Life in Philadelphia after being recommended for the position by Mrs. Harriet Ford, then newly appointed Editor of the Woman's Page of the Chicago Daily News. He there continued, the other editorial duties, the well known Uncle Nat Letters, which Mrs. Ford had previously prepared and which were addressed to the children of parents who subscribed for the Institute services. This work was most enjoyable, but the Institute was not a business success and it was soon evident that another connection was necessary. Fortunately, an opportunity presented itself and he was then employed on the staff of Lea & Febiger, an old and well-known medical publishing firm with offices in Philadelphia, Pennsylvania.

Since September of 1915, with the single exception of two years spent in overseas service during the First World War, Mr. Wilcox has been continuously with Lea & Febiger, as manager of the college department and as editorial advisor. He has visited all of the medical, dental, pharmacy and veterinary schools of the United States and Canada—many of them many times. He has also visited Central and South American colleges and universities, and is well acquainted with the science faculties of these institutions. His years of experience in selection and publication of science textbooks, and his long acquaint-

ance with science teachers has made him well and widely known as the Dean of the Science Bookmen.

Rufus A. Lyman

ADMIRAL W. H. P. BLANDY U.S.N. (RET.)
An Appreciation

The members of the Board of Directors of Health Information Foundation have approved, and wish to make public, the following statement on the death, on January 12, 1954, of our beloved President, Admiral W. H. P. Blandy, U. S. N (Ret.):

The name of Admiral W. H. P. Blandy will occupy a place in lasting memory as one of our nation's outstanding naval leaders and as an American citizen whose personal accomplishments and way of life merited the highest respect.

Recognition is also due for the long range contributions Admiral Blandy made in the field of health, to which he devoted full time during the last four years of his life.

On his retirement from the United States Navy in 1950, Admiral Blandy assumed heavy responsibilities as the first President of Health Information Foundation. In this post he provided clear thinking and dynamic guidance during these formative years of the Foundation. He also inspired us with his unswerving faith in the ability of the American people to take proper action when given the facts. This was important to him. And it is on this faith of his that the program of public information and research of Health Information Foundation was established and will continue.

We who had the privilege of working with Admiral Blandy know a great personal loss at his death and we express to Mrs. Blandy and the family our sincerest sympathy.

(signed) John G. Searle,
Chairman, Board of Directors

The Program for the 1954 Meeting of the AACP

It is impossible at this early date to give details of the AACP meeting in Boston. Actually the program is well along and will include, of course, the usual committee reports, reports of the officers, and meetings of the Sections of the Conference of Teachers. The banquet this year is sponsored by the Boards of Pharmacy and the speaker has not yet been chosen. Secretary Deno states that two features of the annual meeting will be designed in an attempt to get an expression from the membership at large. These two features are (1) a forum on seminars and (2) a forum on time and place of the annual meeting and of seminars. On the forum on seminars we will have a brief presentation by each of the deans who have had charge of a seminar, by Dr. J. B. Burt, and by Dr. W. Paul Briggs to cover the seminars to date. The rest of the program will be a free-for-all

in which we hope to get expressions of opinion on the subjects to be covered from 1955 on, for a period of a few years.

The time and place discussion is particularly pertinent because of the change beginning in 1955 of the time of meeting of the APhA convention. The APhA is now committed to a spring meeting, and the question is simply, "Should we meet with them or at some other time?" If we meet at some other time, should we plan to have our convention at the same time as our seminar or at some other time.

Secretary Deno says he does not expect either one of these forums to give us a clear-cut answer to the questions involved, but he thinks they are both worthwhile from the point of view of enabling members to make their voices heard for the guidance of the Executive Committee.—Ed.

Shall I Study Pharmacy?

Preparation, Uses, and Distribution of the Brochure

Preparation

The career brochure *Shall I Study Pharmacy* is sponsored by the American Association of Colleges of Pharmacy. It was prepared at the direction of the Executive Committee of the Association and final copy was approved by this Committee prior to publication. Actual preparation was in the hands of a Committee on Brochure.

The Committee on Brochure first asked several hundred high school seniors and pharmacy freshmen what sort of information they believed should be presented. From the replies and from suggestions of deans and teachers, contents of the brochure were determined. Editorial criticism was obtained from a university Editor of Special Publications, and an experienced commercial artist advised the Committee and prepared the layout.

Earlier drafts were critically read by twenty-four people, including students, deans, teachers, guidance counsellors, journalists, and officials in pharmaceutical associations. Many helpful suggestions from these critics have been incorporated in the final draft.

The Committee believes the brochure answers in a general fashion questions commonly asked by prospective students, and that it adequately points the ways to sources of further and of more specific information. Eventually, revision will be made in an attempt to improve the data presented, keep it up to date and obtain better illustrations. Suggestions concerning future editions will be welcomed and will be referred to the Committee.

Uses

The most obvious use for the brochure is to supplement the college catalog and other publications sent by an individual college to prospective students. Many colleges will want to use *Shall I Study Phar-*

macy routinely for this purpose. Other institutions may have suitable publications of their own for routine use. In such cases it is hoped that a small stock of the brochure will be ordered so that national guidance publications can be told that single copies are available from each of our colleges of pharmacy.

The brochure is also suitable for use in orientation courses commonly given to first-year students in pharmacy, or in the first professional course offered. It is written in simple non-technical language, but contains considerable information frequently not in the hands of the beginning student in pharmacy.

The most important single use from the standpoint of dignified recruitment of superiorly-qualified applicants (and not one of our colleges has enough of these) is with guidance counsellors, teachers, and principals in high schools, and with teachers and administrators in junior colleges and colleges of liberal arts. The importance of familiarizing these classes of educational workers with the professional opportunities in pharmacy is self-evident. These people in general are not too well-informed on pharmacy. Guidance Leaflet 14 has been widely distributed, but it is doubtful if a majority of today's guidance experts are familiar with it.

To reach the hundreds of guidance counsellors, principals, and key personnel in high schools and feeder-colleges in each state is a project best undertaken at the state level. Since the brochure is a project sponsored by the College Association, and since the problem of securing effective distribution is essentially a college problem, the Committee suggests that the Dean or Deans in each state take the initiative in distributing the brochure to guidance personnel within the state.

Financing the cost of several hundred or even thousand copies of the brochure to be sent to guidance personnel and the handling and mailing charges presents an additional problem. We have considerable information indicating that many state boards and state associations are becoming increasingly aware of the importance of recruitment of superiorly-qualified applicants. At Salt Lake City, both the National Association of Boards of Pharmacy and the National Conference of State Pharmaceutical Association Secretaries passed resolutions endorsing the brochure project of the College Association, and encouraging their members to cooperate in developing and financing a plan for effective distribution within each state as determined by the recognized pharmaceutical interests of the state. In the letter of transmittal being sent with a copy of the brochure to each board and association secretary we are suggesting that in many cases the secretaries will hear from the deans concerning the use of the brochure within the state.

A fourth important use of the brochure is in formal guidance classes. We are informed that such classes are becoming more and more common in both junior and senior high schools, and that the

teachers are eager to have such publications as *Shall I Study Pharmacy* available in the school libraries. Announcement of availability and a copy is being sent to each of the principal national journals dealing with the problems of guidance counsellors, of school principals and of junior colleges. Undoubtedly, many of these journals will publish data on availability of the brochure. Price quotations on single copies and on small lots have been made primarily for the benefit of these users.

We also believe that practicing pharmacists will be interested in the brochure. A large proportion of students in pharmacy come from retail and other types of pharmacies and the brochure will be helpful to pharmacists who attempt to interest well-qualified apprentices in education for pharmacy. National (as well as the state) associations are being sent the brochure and in many instances will inform their members on its availability.

Distribution

Initial distribution of sample copies is being made at the direction of the Executive Committee to each:

President of a member college	Secretary of a state board
Dean of a member college	Secretary of a state association
Secretary of a metropolitan association	

In addition, a sample copy is being sent to the secretary of each of the national conferences, councils, foundations, and associations, and to the editor of each of the state and national journals devoted to pharmacy.

The brochure is being made available postpaid at rock-bottom cost:

Single copies	\$0.35	Ten	\$3.00
Three	1.00	Twenty	5.00
100 or more \$20.00 per 100			

Orders should be addressed to:

R. A. Deno, Sec., A.A.C.P.
U. of M., Coll. of Pharmacy
Ann Arbor, Michigan

Dr. Melvin W. Green, Director of Educational Relations of the American Council on Pharmaceutical Education, speaking at the Ninth Annual Microchemical Symposium of the Metropolitan Microchemical Society held in the Brooklyn College of Pharmacy, Brooklyn, New York, on the subject, *The Philosophy of Standardization*, said: "It is not alone the quality of science and technology involved in the United States Pharmacopoeia and the National Formulary that give these books of standards their usefulness, but rather the democratic and cooperative attack used in producing the standards. The rather simple directness of the consensus principle used by these bodies gives the programs the vitality of elementary self government. Questions settled by decree do not remain settled because usually they are not solved."

Dr. Green told the microchemists that, "In drug standardization, the figurative 0.56 percent of impurities may be of tremendous importance. In the synthesis and purification of drugs, side-reactions usually occur leaving a residue of isomers and more or less closely related products. Not infrequently these residues are dangerous or contribute to the elegance and stability of the drug. In the development of tests for these impurities, it is necessary to be aware of changes in sources of materials and methods of manufacture which may influence the nature and quantity of some of these ingredients. At the same time here is an area where it is easy to resort to mere quibbling".

In discussing standards in pharmaceutical education, Dr. Green stated that the pharmacy graduate today has nearly the chemical training of a chemistry major augmented by education in the biological sciences, business and economics, as well as professional courses, all of which should make him a valuable man, in the laboratories of the pharmaceutical industries.

Rather than leading to a life of dull mediocrity, standardization relegates solved problems to the field of the routine, leaving the creative faculties free for the problems that are to be solved. "This", Dr. Green declared, "is the basis for a sound philosophy of standardization."

Pharmacy's Own Designation

Secretary Wilbur E. Powers of the New Jersey Board of Pharmacy, has recently brought to the attention of the Board the fact that pharmacists generally, including members of the Board, place too much stress upon their degrees, which only emphasizes to the public that there is a difference in the educational training of pharmacists everywhere. The New Jersey Board has been guilty of this practice in signing permits and certificates, as they have always ended their signatures, with the abbreviation of their degrees. This was also done on Board stationery and most pharmacists in New Jersey include the abbreviation of their degrees on the signs required by law to be displayed on the windows of pharmacies listing the name of the registered pharmacist in charge. Secretary Powers raises the question as to why should pharmacists point out to the public so specifically that some did not receive any formal education and others have obtained degrees representing a varying number of years in college. He further says there are only approximately 3,000 pharmacists practicing retail pharmacy, full time, in New Jersey, which makes this a very select professional group. Each has a certificate reading "Registered Pharmacist" and it is logical and proper to use exclusively the abbreviation "R.P.". The Board decided that it will immediately discontinue the use of degrees on certificates and on all Board literature as quickly as can be initiated. Only the abbreviation "R.P" after the signature of each Board member or Secretary will be used. The Board also decided to give consideration

to promulgating a regulation which will require uniformity in the display of the name of a pharmacist in or on the window of a pharmacy, using only the designation of "R.P." after the name. In addition the Board is planning to initiate an educational campaign among New Jersey pharmacists to popularize the use of the designation "R.P." along with the pharmacist's own name in the operation of pharmacies and in advertising. The Board also plans to encourage the greater use of the term "pharmacy" rather than "drug store" in the thought that the term "pharmacy" is the exclusive property of the profession. It is hoped that this small effort will meet with the approval of pharmacists elsewhere and that the term "R.P." will become an exclusive and emphatic designation of the registered pharmacists of the country.

The Editor, at least, is sympathetic with the desire of the New Jersey Board to establish a designation for pharmacists that is all their own. The term "Registered Pharmacist" and the abbreviation "R.P." is something that the public understands and is, in fact, all he wants to know, whether the pharmacist is qualified under the laws of his state to practice his profession. The use of a number of degrees after the pharmacist's name has little or no meaning to the layman and only leads to greater confusion. To the general public the designation "M.D." means just one thing, namely, a practitioner of medicine. If a doctor or pharmacist is superior to his fellow practitioners he must establish that fact himself by the excellence of his work and of his living in the community in which he resides. The designation "R.P." would seem to be very satisfactory, at least until we establish a specific professional degree for our profession.—Ed.

The Survey of Physiological Sciences is conducting a study of the present status of physiology and closely related fields. The study is sponsored by the American Physiological Society and is operating under a research grant from the National Science Foundation. The purpose of this study is to evaluate the position of physiology as a scientific discipline and to provide information for those concerned with formulating policies affecting physiology as a profession. This study is separate from the registration program being undertaken by the National Scientific Register. As an important part of the study, a questionnaire is being sent to all persons engaged in research, teaching, and applications of all aspects of physiology. The emphasis in this questionnaire is on how people *feel*, that is, on their attitudes and opinions as well as on factual information. The questionnaire is to be sent to the Survey Research Center of the University of Michigan, where the results will be processed and analyzed. All information from the questionnaire will be treated anonymously and presented in statistical form. The Executive Director is Mr. L. M. N. Bach, care of the American Physiological Society, 2101 Constitution Avenue, Washington 25, D. C.

Program of the Pharmacy Subsection (Np) of the 1952 Meeting of the American Association for the Advancement of Science.

Through some slip-up the report of the 1952 meeting of the Pharmacy Subsection (Np) did not come in time for publication in the October 1953 issue of the **Journal** where it naturally belongs with the other reports of organizations to which the AACP appoints representatives. Unfortunately, for publication purposes, the annual meeting of the AAAS occurs at the end of the year in December which makes it impossible for the officially appointed representatives to prepare a report for presentation or publication before the annual AACP meeting in the year in which the meeting to be reported is held. To do so he would have to tell what happened at the convention before the convention was held.

Another procedure would be to print the program of the Pharmacy Subsection, in order to give it publicity, in the July issue of the **Journal** before the annual AACP meeting in August. This would entail the difficulty of having to print a program before it was complete which would minimize the record of Pharmacy's contribution to the work of the AAAS.

Since a report is made by the Secretary of the Subsection Np for publication in **Science** it scarcely seems necessary to print a complete report in our own journal. However, we believe a brief abstract should be printed in order to make the record complete and at the same time give some recognition to those who have so loyally supported the Np Subsection program and the annual AAAS conventions.

While the responsibility for the support of this program is the moral responsibility of the APhA and all of its affiliated organizations (and they have all done their part well), the AACP has had a large part in the preparation of the program and has given the section its continued support.

Bearing these facts in mind the following brief report is presented.

Secretary of the subsection, Glenn L. Jenkins, School of Pharmacy, Purdue University.

Program Chairman, George F. Archambault, U. S. Public Health Service.

Program Committee: George F. Archambault, Chairman; Troy C. Daniels, University of California; Glenn L. Jenkins; Albert M. Mattocks, McNeil Laboratories, Philadelphia; and Charles Rabe, Jr., St. Louis College of Pharmacy, Local Secretary.

The Program

Monday Morning, December 29

1. Greetings and messages by representatives from seven affiliated organizations.
2. An evaluation of the Rates of Release of Theophylline from Suppository Bases. Charles F. Peterson, School of Pharmacy, University of Kansas and Arthur J. Guida, School of Pharmacy, Medical College of South Carolina.
3. The Effect of Banthine and Prontal in Human Thermoregulatory Sweating. Morton J. Rodman, College of Pharmacy, Rutgers University.
4. The Synthesis of Fluorobromo Derivatives of Benzoic Acid as Possible Radiographic Opaques. Glenn L. Jenkins, Gustav E. Cwalina, and Charles H. Sprague, Purdue University.
5. The Solubility of Phenobarbital in Alcohol-propylene Glycol-water mixtures. Charles F. Peterson and Raymond E. Hopponen, University of Kansas.

Monday Afternoon, December 29

1. Experience with a New Method of Producing Distilled Water for the Hospital Pharmacy. Mary A. Lane, Thomas A. Manzelli, and Herbert L. Flack, Jefferson Medical College Hospital and Philadelphia College of Pharmacy and Science.
2. The Anti-fungal Activity of an Extract of Osage Orange Wood. Charles F. Peterson and Eugene W. Brockmeyer, University of Kansas.
3. A Symposium. The Accreditation of Hospital Pharmacies and the Approval of Pharmacy Intern and Residency Programs, the Parts to be Played by the Joint Commission on Accreditation of Hospitals, the Schools, the Associations and the Hospitals Themselves.
Speakers: Martha Johnson, Assistant to the Director, Joint Commission on Accreditation of Hospitals; James R. Shaw, Chief Division of Hospitals, U. S. Public Health Service; Robert P. Fischelis, Secretary American Pharmaceutical Association; Ray Kneifel, Executive Secretary, Catholic Hospital Association of the United States and Canada; Louis C. Zopf, Dean College of Pharmacy, State University of Iowa, Secretary, American Association of Colleges of Pharmacy; Grover C. Bowles, Strong Memorial Hospital, Rochester, New York, President, American Society of Hospital Pharmacists; Donald C. Brodie, University of California College of Pharmacy.

Tuesday Morning, December 30

1. The Use of Isopropanol in Ice Bags. Margaret Trevis and Evelyn G. Scott, St. Luke's Hospital, Cleveland, Ohio.
2. How Many Sterile Gauze Sponges are Needed to Adequately Protect a Clean Wound? Sister Mary John, Mercy Hospital, Toledo, Ohio.
3. Suggested Content of Pharmacists' Public Relations Brochure. C. Lee Huyck, St. Louis College of Pharmacy and Allied Sciences.

4. Some Important Points in the History of Education and Legislation in a Century of American Pharmacy. C. Lee Huyck.
5. A Symposium: The Content of Hospital Pharmacy Courses in Schools of Pharmacy.

Speakers: Sister Mary Berenice, St. Mary's Hospital, St. Louis; Allen V. R. Beck, Indiana University Medical Center Pharmacy; Ray Kneifel, Executive Secretary, Catholic Hospital Association of the United States and Canada, St. Louis; Glenn L. Jenkins, Dean, School of Pharmacy, Purdue; Louis C. Zopf, Dean, State University of Iowa; W. Arthur Purdum, Johns Hopkins Hospital Pharmacy; Don E. Franke, University of Michigan Hospital Pharmacy; Donald L. Brodie, Supervisor of Pharmacy Hospital Education, College of Pharmacy, University of California.

Tuesday Afternoon, December 30

1. Investigations on Hectorite. Martin Barr and Ivor Griffith, Philadelphia College of Pharmacy and Science.
2. An Evaluation of Some Bacteriostatic Agents in Multiple Dose Parenterals. Paul E. Zimpfer, Professor of Biology, Capital University, and Christopher H. Costello, Scientific Director, Columbus Pharmaceutical Company, Columbus, Ohio.
3. An Investigation of the Iodine Compounds Present in Milk Following Idiocasein and Iodine Administration. Walter E. Wright, John E. Christain, and Fred N. Andrews, Purdue University School of Pharmacy.

4. A Symposium: The Role of the USP, the NF, the NNR, and the ADR in Developing and Maintaining Sound Drug Therapy Trends and Standards.

Speakers: Lloyd C. Miller, Director of Revision USP, New York City; Justin L. Powers, Chairman, Committee on the NF, Washington; Louis C. Zopf, Dean College of Pharmacy, State University of Iowa; Robert T. Stormont, Secretary, Council on Pharmacy and Chemistry, American Medical Association, Chicago; J. Roy Doty, Secretary, Council on Dental Therapeutics of the American Dental Association, Chicago.

Certainly this was an impressive program. It should be noted that in the later years the program has been greatly expanded and extended. Dean Jenkins says that although the attendance has been good, it is not all it should have been. This should be borne in mind in future meetings. Those pharmacists in the populous centers where the meetings of the AAAS are held should see to it that the attendance at the program of the Pharmacy Subsection Np is impressive. We have found that it makes a difference in the meetings of the American Council on Education whether one representative of pharmacy or a dozen are in attendance, not only because it impresses the Council, but what is more important it is a stimulus to our own morale and objectives.—Editor.

New Books

Pharmacology and Therapeutics by Arthur Grollman, Ph.D., M.D., F.A.C.P., Lecturer in Pharmacology and Toxicology, The Medical Branch, and Professor and Chairman of the Department of Experimental Medicine, The Southwestern Medical School, The University of Texas; Attending Physician, Parkland Hospital; Consultant in Internal Medicine, Baylor University Hospital; Consultant, Veterans Administration Hospital, Dallas, Texas. 1954. Second Edition. 866 pp. 127 illustrations. Lea and Febiger. Price \$10.

A number of illustrious pioneer pharmacologists appeared on the American scene in the latter years of the nineteenth century. One of them was Arthur H. Cushny. He wrote a textbook to which he gave the title "A Textbook of Pharmacology and Therapeutics or the Action of Drugs in Health and Disease". In the first half of the twentieth century it was subjected to many revisions and many editions were printed. If it is possible to regard a textbook as a classic, it attained classical standing.

In the preface to the First Edition, Cushny gives the scope of the text in the following words: "As regards the scope of the work, I have attempted to give the present standpoint of knowledge of such bodies as are of therapeutic or toxicological interest, and also of those which, possessing in themselves no immediate interest in practical medicine, have thrown important light on biological problems, and are accordingly likely to be referred to in scientific literature."

Cushny made many contributions to clinical medicine but his great contribution lies in the fact that he retained the useful and discarded the useless in drugs. He knew what was the wheat and what was the chaff.

In the preface to the Eighth Edition Dr. Cushny wrote: "The text has been embellished with a few of the many references to drugs which are to be met with in general literature, in the hope that they may serve to enliven the subject and perhaps encourage my readers to pursue explorations which will lead them into pleasant pastures. Should they by good fortune reach "the Schoole of Salerne" (1607), they will hardly leave it, before reaching the farewell verse:

'And here I cease to write, but will not cease
To wish you live in health, and die in peace:
And ye our Physicke rules that friendly read,
God grant that Physicke you may never need.'

For fear the reader may think I am writing a revision of Cushny's effort through the years, I want to say that I am not. I am giving the background or setting the stage, as it were, for the contribution Dr.

Grollman has so well made in his text. Dr. Grollman, himself says, in the Preface to the Second Edition: "In the First Edition of the present book an attempt was made to continue the 'Severely critical and rigorously scientific' approach to the subject which characterized the original text of Cushny which it replaced. This has continued to be my goal and although little remains of the substance of Cushny's original text, it is hoped that the retention here and there of an inimitable and unimprovable phrase of the great master will add to the reader's enjoyment and value of the book." Well indeed, has Dr. Grollman accomplished his objective. The clarity of the language is responsible for its appeal to the reader. When you start a chapter you can't stop until it is finished and what you have read, sticks. You have an urge to read the next chapter and so on until the book is finished. And when it is finished you have an urge to become a pharmacologist. That is the sign of a good textbook.

It is useless for me to say the book has been enlarged, almost completely rewritten, the latest factual material has been incorporated. But other reviewers will dwell upon these points. I have stressed that much neglected field, the Art of writing textbooks. Dr. Grollman has set a pattern which we can all follow to advantage for the benefit of our students and our respective disciplines.

The publishers deserve more than a mere word of commendation. They have maintained the traditional type and even the style of binding that has been used for half a century which may be a minor thing but nevertheless it is an added pleasure for those who have followed the text through the years.—R.A.L.

The American Foundation for Pharmaceutical Education—Roster and Programs. 1953. 57 pp. Published by The Foundation, 1507 M Street, N.W., Washington 5, D. C.

This annual brochure gives the Officers, the Members, the Directors, the Board of Grants, the Committees, the Origin, Purposes and Objectives, the Programs, the Roster of Graduate Fellows, the E. L. Newcomb Memorial Awards, the Recipients of Undergraduate Scholarships and the 1953 Patrons of the Foundation and a list of Accredited Colleges of Pharmacy as per date of publication. The list of Fellows is complete since the creation of the Foundation. It gives the degrees of each and gives the names of the institutions which granted them and the area of specialization. The title of the thesis for the doctorate is given in many cases. The names of current holders of Fellowships are starred. The brochure is invaluable to administrators who are seeking teachers or researchers in the specialties for it constitutes, at least in embryo, a veritable Who's Who in American Pharmacy.—R.A.L.

Directory of Professional Opportunities by Robert Shasteck, Director of Research B'nai B'rith Vocational Service Bureau. 1954. 81 pp. B'nai B'rith Vocational Service Bureau, 1761 R Street, N.W., Washington, D. C. Price 75 cents.

The director gives the requirements regulating 17 vocations, including the health professions, in the United States. It gives the median incomes and population ratios in approximately 200 major American cities and metropolitan areas. The directory has been compiled as a guide to young men and women who are about to finish their professional or semi-professional training and are faced with the problem of selecting a place in which to start their chosen occupations.—R.A.L.

This We Believe About Education by the Educational Advisory Committee and the Educational Advisory Council of the National Association of Manufacturers. 1954. A 32 page brochure. Obtainable without charge from the Education Department of the Association, Public Information Division, Leslie Avery, Director, 14 West 49th St., New York 20, N. Y.

The brochure gives the findings of a special committee of educators and industrialists who made a two year study of major controversial issues concerning education in the United States. The subjects discussed are: The Purposes of Education in America; The Support of Education; The Responsibilities of Education; The Responsibilities of Industry to Education; The Ultimate Responsibility for Education; and a final summary—*This We Believe About Education*. Every educator and every industrialist owes it to himself and to the public to read this brochure which is teeming with a sound philosophy. The National Association of Manufacturers, in releasing the report, said that it was not presented as an official policy position of any educational, business, or industrial association and that it was published by the NAM as a public service in the interest of greater education-industry cooperation.—R.A.L.

A Primer of Public Relations for the Pharmaceutical Industry by the Public Relations Committee APMA, Robert A. Hardt, Chairman. 1953. 90 pp. Order from American Pharmaceutical Manufacturers' Association, 30 Rockefeller Plaza, New York 20, N. Y. Price to members \$3.00; to non-members \$4.50.

The objective of the Primer is aptly stated in the Introduction—"The best way to enjoy good public relations is, as aptly stated by Ivy Lee, to deserve them. But in addition to sound basic policies, the successful management of public relations requires a great deal of planning, organization and meticulous attention to detail. It is the chief purpose of this primer to call attention to some aspects of public relations. And in the Foreword President Michael Francis Charley says: "It is our hope that this Primer, outlining the fundamentals of some important phases of public relations, will be helpful to the membership. It is a step in the right direction, although, admittedly, it is only a first step. I am confident that we shall continue to deserve and hold public favor and that we will keep in mind the words of Abraham Lincoln written at a time when public relations were not so well

crystallized as they are today: 'With public sentiment, nothing can fail—without it, nothing can succeed.'

There are ten chapters in which relations are discussed. The titles follow: Publicity, News Releases, Cost of Drugs, Animal Experiments, Constructive Approach to Complaints, Community Relations, Plant Tours, Correspondence, Making the Annual Report Speak, and a Bibliography. Each chapter lays down a pattern for approach and discussion. Take for example, the chapter on Facts and Fallacies About Animal Experiments. The author states "Since most opponents of animal experiments are misguided persons who lack adequate information, it is important to answer them with facts. Once people understand that penicillin, sulfa drugs, vitamins, hormones and life-saving operations were made possible by animal experiments, they are almost certain to support such experiments." The chapter then takes up research and animal experiments, safety and standardization of drugs, animal experiments in medical education, animal experiments and national defense, benefits for animals, and facts about public opinion concerning animal experiments. While the book was written primarily for the use of the American Pharmaceutical Manufacturers Association, the patterns it lays down are of equal value to the retail druggist, the pharmaceutical educator and in fact to every one engaged in any phase of the drug industry for the cultivation of good professional relations.

—R.A.L.

New in the Family

Joseph William Harding.—Born November 9, 1953, son of Prof. and Mrs. Donald W. Harding, Purdue University.

Linda Susan Weeks.—Born February 5, 1954, second daughter and third child of Dr. and Mrs. James R. Weeks, Drake University.

Julia Elaine Call.—Born December 3, 1953, daughter of Prof. and Mrs. T. G. Call, Montana State University.

Ronald Stephen Campbell.—Born March 7, 1954, son of Dr. and Mrs. James A. Campbell, University of South Carolina.

Linda Ann Harris.—Born January 4, 1954, daughter of Mr. and Mrs. James Harris, University of South Carolina.

Timothy Alan Moore.—Born March 8, 1954, second son of Dr. and Mrs. Willis E. Moore, George Washington University.

Carol Ellen Cooper.—Born March 9, 1954, daughter of Mr. and Mrs. Franklin D. Cooper, George Washington University.

Donald Kay Myers.—Born January 16, 1954, daughter of Dr. and Mrs. Donald B. Myers, Butler University.

Virginia Ann Martin.—Born February 27, 1954, daughter of Dr. and Mrs. John Martin, Butler University.

Nancee Lynne Schleif.—Born September 22, 1953, second daughter of Dr. and Mrs. Robert H. Schleif, St. Louis College of Pharmacy and Allied Sciences.

Debra Ann Lindhorst.—Born January 31, 1954, daughter and first child of Mr. and Mrs. Taylor E. Lindhorst, St. Louis College of Pharmacy and Allied Sciences.

INSTITUTIONS HOLDING MEMBERSHIP IN THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

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University of New Mexico, College of
Pharmacy, Albuquerque. (1932)
E. L. Catalina, Dean

New York

University of Buffalo, School of Phar-
macy, Buffalo. (1939)
A. B. Lemon, Dean
Columbia University, College of Phar-
macy of the City of New York. (1939)
E. K. Leuallen, Dean
Fordham University, College of Phar-
macy, New York. (1939)
James H. Kidder, Dean
Long Island University, Brooklyn Col-
lege of Pharmacy, Brooklyn. (1939)
Hugo H. Shaefer, Dean
St. John's University, College of Phar-
macy, Brooklyn. (1951)
John L. Dandrea, Dean
Union University, Albany College of
Pharmacy, Albany. (1945)
Francis J. O'Brien, Dean

North Carolina

University of North Carolina, School
of Pharmacy, Chapel Hill. (1917)
E. A. Brocht, Dean

North Dakota

North Dakota Agricultural College,
School of Pharmacy, Fargo. (1922)
W. F. Sudro, Dean

Ohio

Ohio Northern University, College of
Pharmacy, Ada. (1925)
Albert C. Smith, Dean
University of Cincinnati, Cincinnati
College of Pharmacy. (1947)
J. F. Kowalski, Dean
Ohio State University, College of
Pharmacy, Columbus. (1900)
B. V. Christensen, Dean
University of Toledo, College of Phar-
macy, Toledo. (1941)
Charles H. Larwood, Dean

Oklahoma

Southwestern State College, School of
Pharmacy, Weatherford. (1951)
W. D. Strother, Dean
University of Oklahoma, College of
Pharmacy, Norman. (1905)
Ralph W. Clark, Dean

Oregon

Oregon State College, School of Phar-
macy, Corvallis. (1915)
George E. Crossen, Dean

Pennsylvania

Duquesne University, School of Phar-
macy, Pittsburgh. (1927)
Hugh C. Muldoon, Dean
Philadelphia College of Pharmacy and
Science, Philadelphia. (1900)
Ivor Griffith, Dean
Temple University, School of Pharma-
cy, Philadelphia. (1928)
Joseph B. Sprowls, Dean
University of Pittsburgh, School of
Pharmacy, Pittsburgh. (1900)
Edward C. Reif, Dean

Philippines

University of the Philippines, College
of Pharmacy, Quezon City. (1917)
Petrocinio Valenzuela, Dean

Puerto Rico

University of Puerto Rico, College of
Pharmacy, Rio Piedras. (1928)
Luis Torres-Diaz, Dean

Rhode Island

Rhode Island College of Pharmacy and
Allied Sciences, Providence. (1926)
W. Henry Rivard, Dean

South Carolina

Medical College of South Carolina,
Charleston. (1940)
William A. Prout, Dean
University of South Carolina, School
of Pharmacy, Columbia. (1928)
Robert W. Morrison, Dean

South Dakota

South Dakota State College, Division
of Pharmacy, Brookings. (1906)
Floyd J. LeBlanc, Dean

Tennessee

University of Tennessee, School of
Pharmacy, Memphis. (1914)
Karl J. Goldner, Dean

Texas

Texas Southern University, School of
Pharmacy, Houston. (1952)
Hurd M. Jones, Dean
University of Houston, College of
Pharmacy, Houston. (1952)
N. M. Ferguson, Dean
University of Texas, College of Phar-
macy, Austin. (1926)
Henry M. Burlaga, Dean

Utah

University of Utah, College of Phar-
macy, Salt Lake City. (1951)
L. David Hiner, Dean

Virginia

Medical College of Virginia, School of
Pharmacy, Richmond. (1906)
E. B. Smith, Dean

Washington

State College of Washington, School of
Pharmacy, Pullman. (1912)
Haakon Bang, Dean
University of Washington, College of
Pharmacy, Seattle. (1903)
Forest J. Goodrich, Dean

West Virginia

West Virginia University, College of
Pharmacy, Morgantown. (1920)
J. Lester Hayman, Dean

Wisconsin

University of Wisconsin, School of
Pharmacy, Madison. (1900)
Arthur H. Uhl, Dean

Wyoming

University of Wyoming, College of
Pharmacy, Laramie. (1951)
David W. O'Day, Dean

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